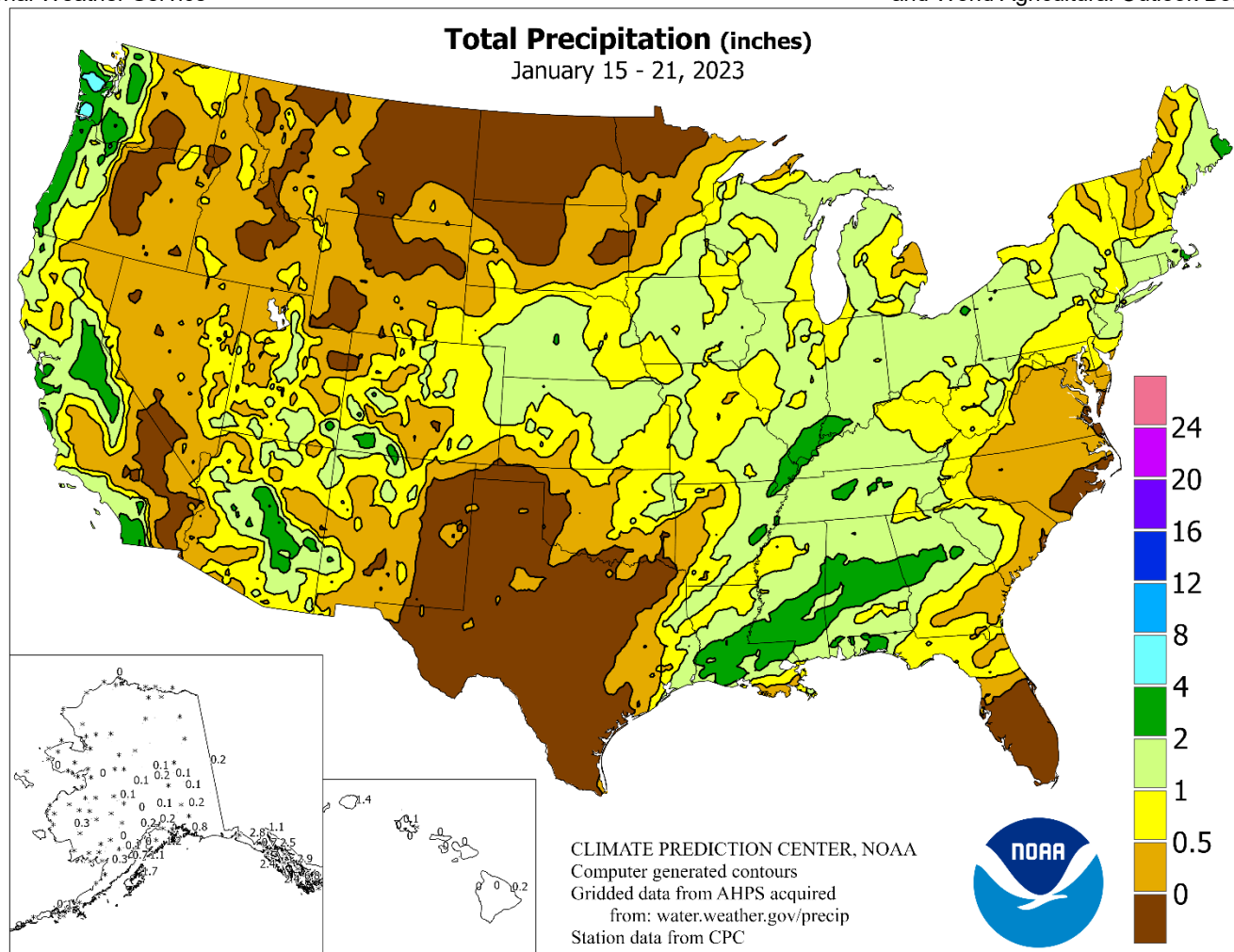


WEEKLY WEATHER AND CROP BULLETIN

U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
National Weather Service

U.S. DEPARTMENT OF AGRICULTURE
National Agricultural Statistics Service
and World Agricultural Outlook Board



HIGHLIGHTS

January 15 – 21, 2023

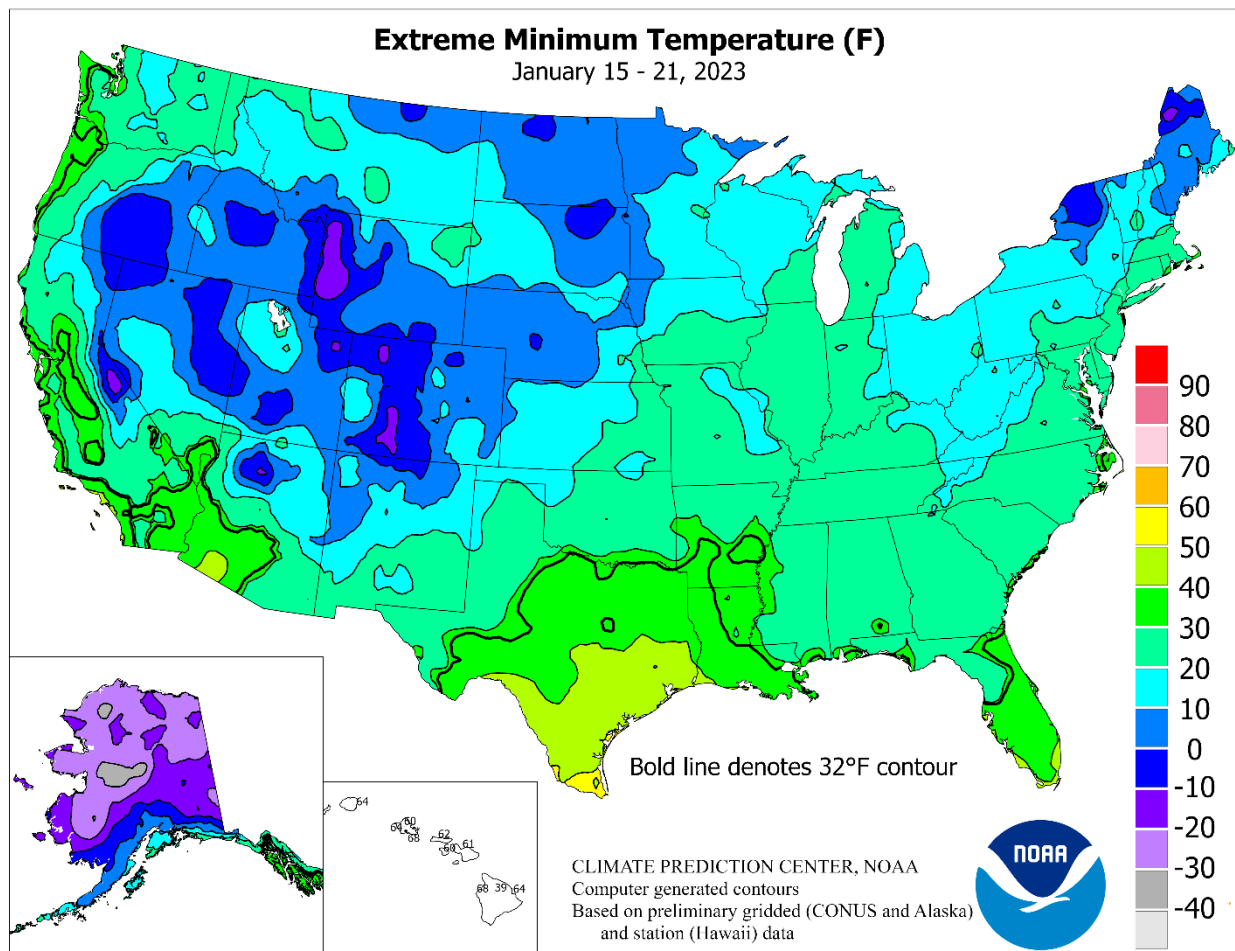
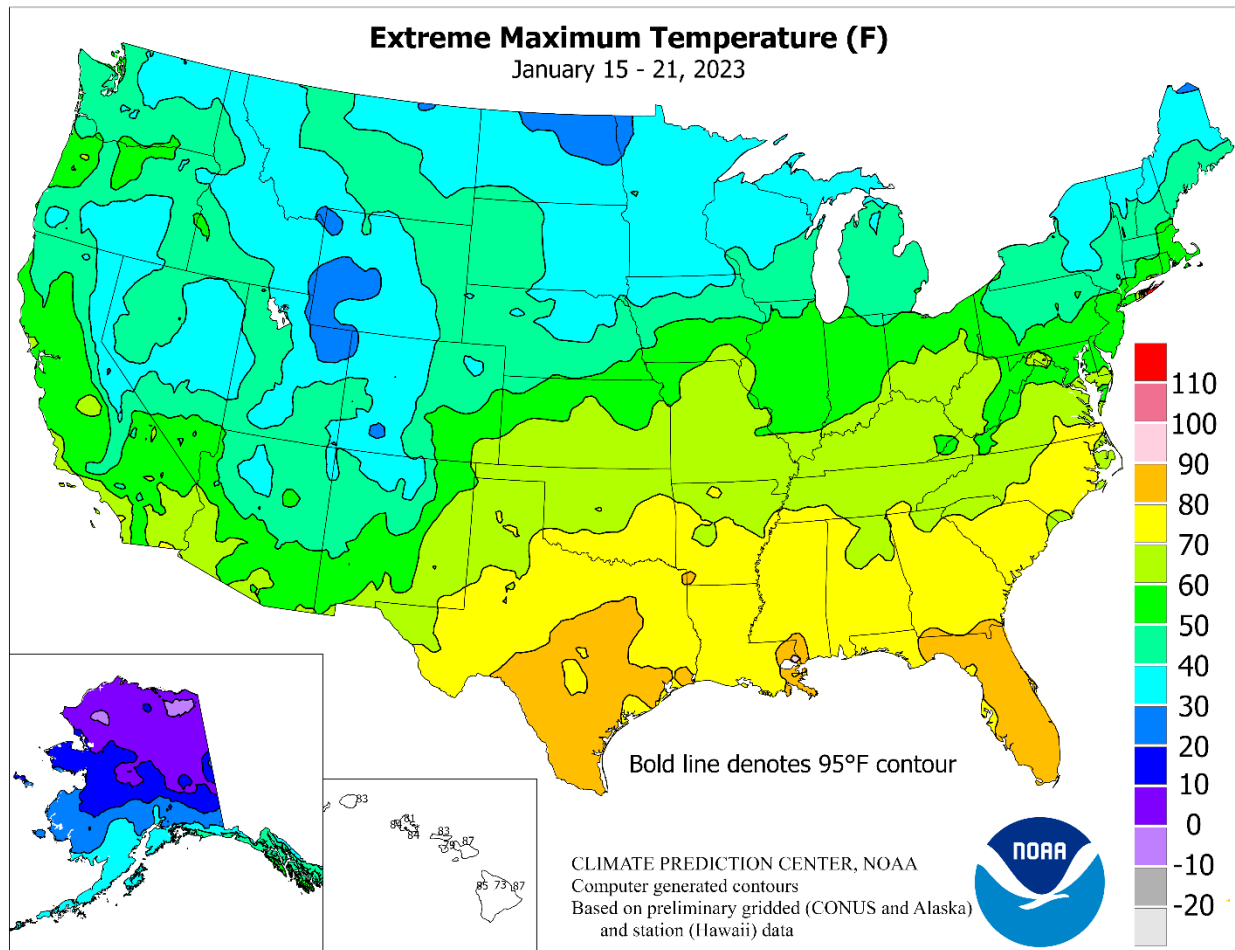
Highlights provided by USDA/WAOB

California finally got a reprieve from relentless storms, allowing flood-damage assessments to begin. Meanwhile in the **Sierra Nevada**, mountain snowpack exceeded the amount expected to fall during an entire October-March season—according to the California Department of Water Resources—with the average water equivalency topping 33 inches. For **California's** farming communities, the bounteous wet season portended more favorable water allocations for 2023, albeit with complications related to lingering standing water and infrastructural damage to

(Continued on page 3)

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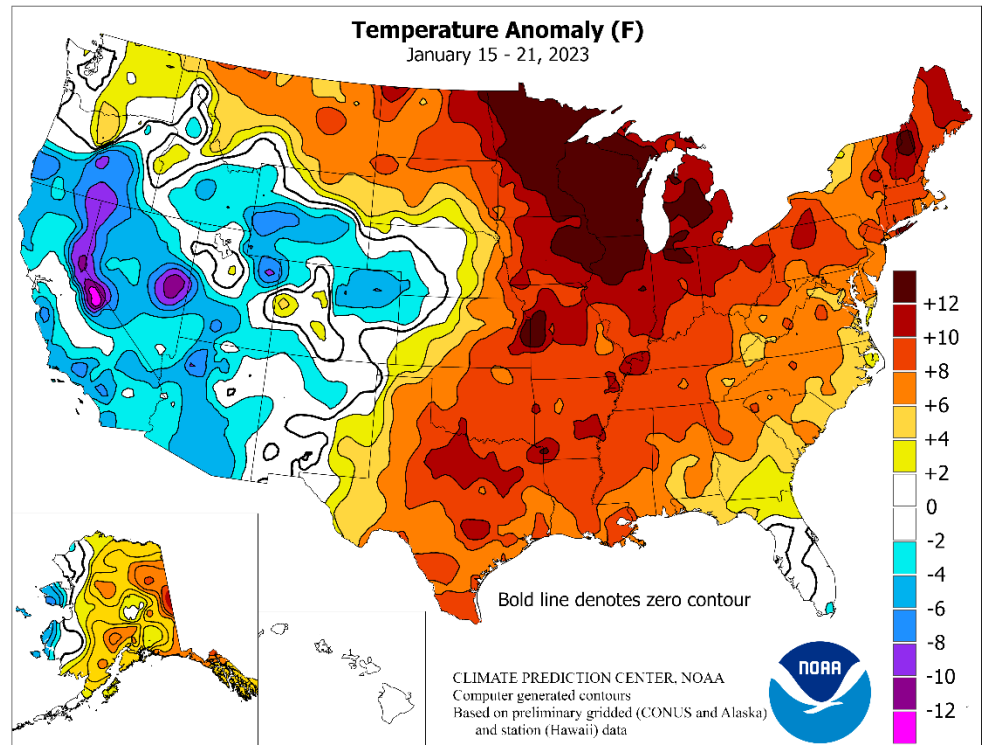


(Continued from front cover)

levees, roads, and farm buildings and equipment. Meanwhile, significant precipitation (and storminess) shifted into the **Southwest** before taking aim on the **central Plains** and much of the **eastern one-third of the U.S.** Snow across the **central Plains** caused travel disruptions and temporarily increased livestock stress—but provided much-needed moisture and insulation for drought-stressed winter wheat. Precipitation was highly variable across the **Midwest**, **South**, and **East**, with most areas experiencing unusually warm weather and some locations receiving significant rain or snow. Some of the heaviest rain, locally 2 inches or more, fell in the **central Gulf Coast region** and environs. Snow was mainly limited to the **North**, from the **upper Midwest to northern New England**. **Midwestern** weekly temperatures generally averaged 10 to 20°F above normal, except in a few western areas—such as **Nebraska**—where heavy snow fell. Readings also averaged at least 10°F above normal in parts of the **Northeast** and scattered locations from the **southern Plains into the mid-South**. In contrast, temperatures averaged at least 5 to 10°F below normal in many locations from **Oregon and California eastward across the Great Basin, Intermountain West, and Southwest**.

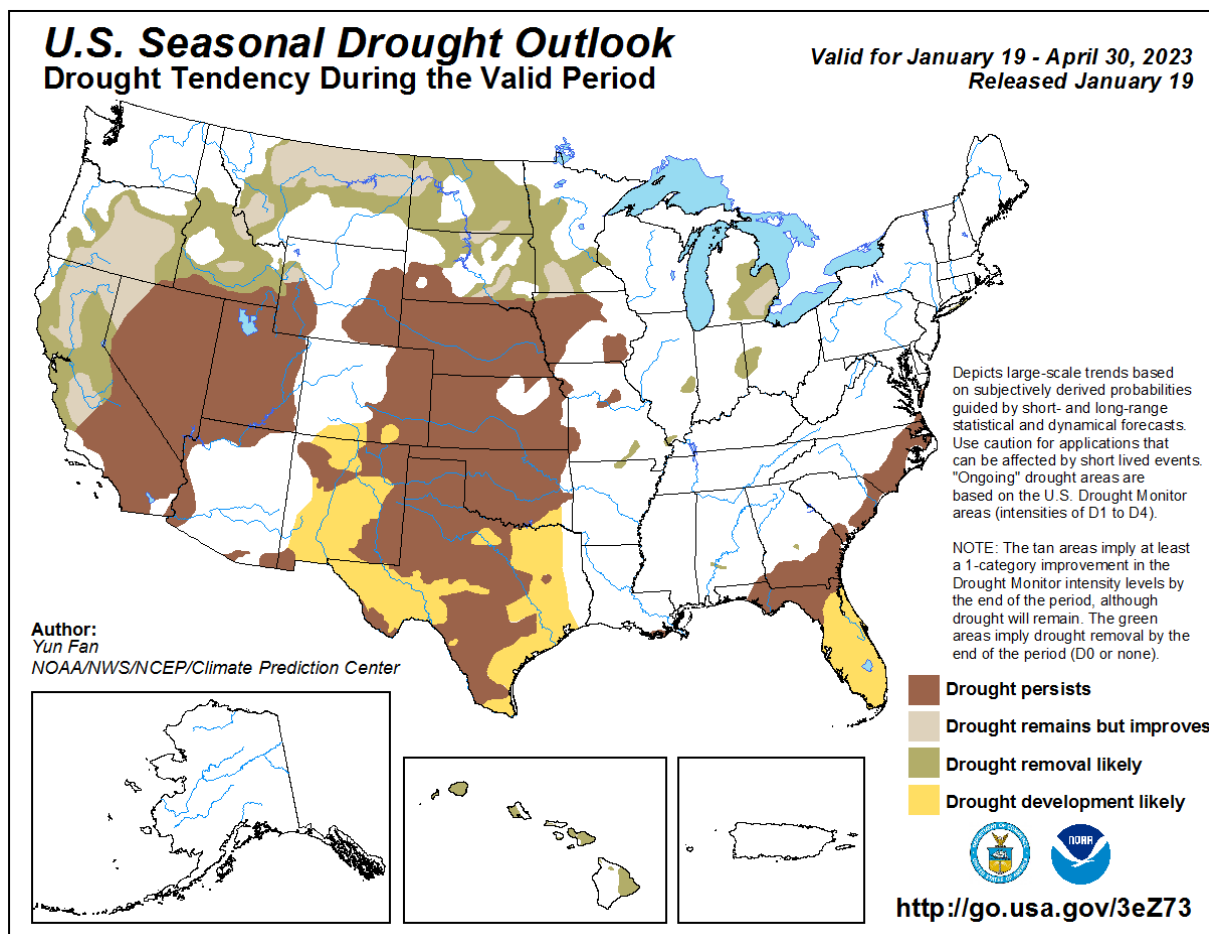
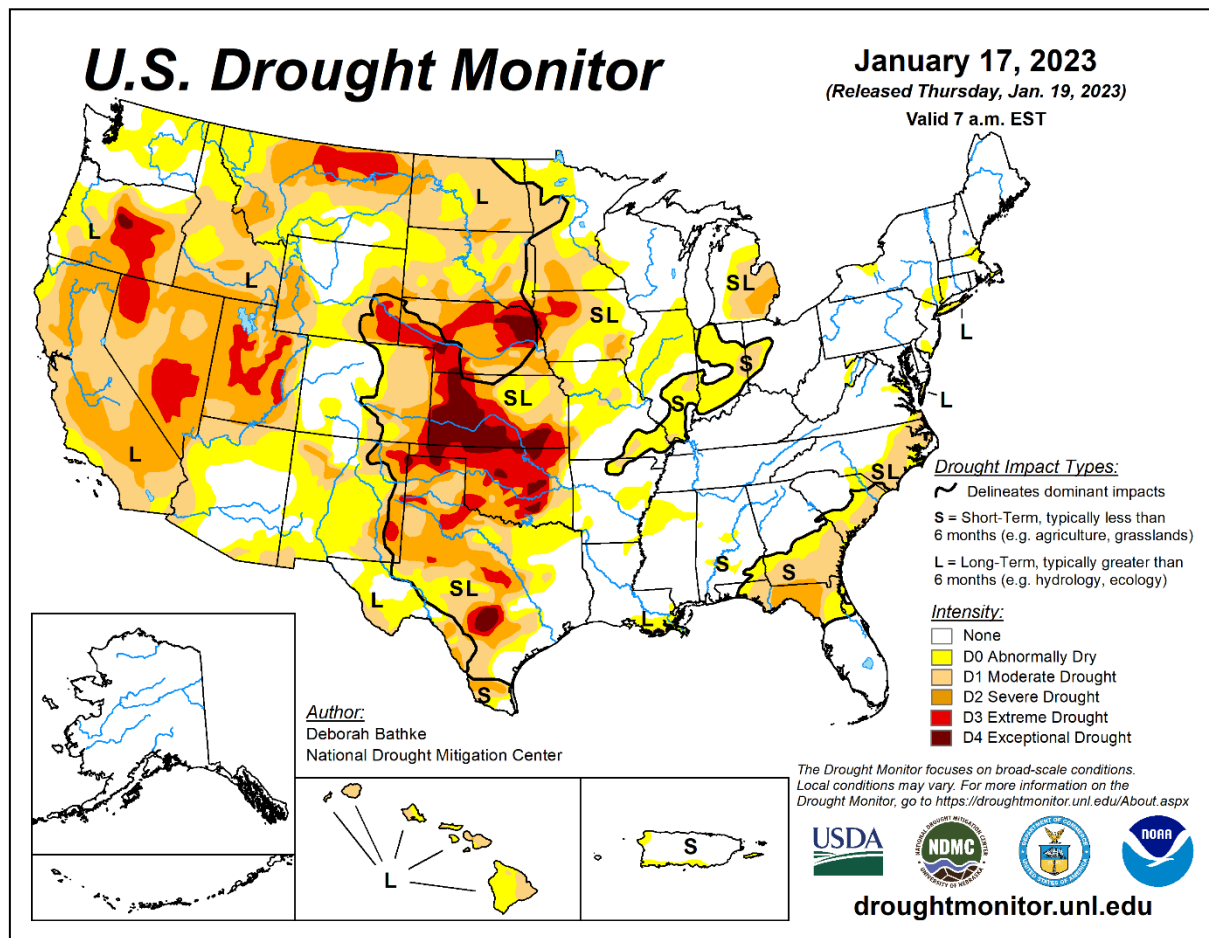
Despite overarching warmth across the **eastern half of the U.S.**, the week began with light freezes on January 15-16 as far south as **central Florida**. **Daytona Beach, FL**, noted a low of 32°F—not a record for the date—on January 15. However, **Daytona Beach** had been colder last month, with consecutive freezes on December 24-25 and a low of 27°F on the latter date. Late in the week, frost and freezes were reported in portions of **California's San Joaquin Valley** and the **Desert Southwest**. **Nogales, AZ**, tallied a daily-record low of 21°F on January 21. Elsewhere on the 21st, **Hanford, CA**, reported 32°F, the lowest temperature in that location since a string of light freezes (lows of 31 or 32°F) occurred from December 13-17. Meanwhile, unusual warmth developed in the **Gulf Coast region**. By January 16, **Corpus Christi, TX**, collected a daily-record high of 85°F. On the 17th, daily-record highs topped the 80-degree mark in **Del Rio, TX** (85°F); **Baton Rouge, LA** (83°F); and **Texarkana, AR** (81°F). **Corpus Christi** surpassed its earlier reading with a daily-record high of 87°F on January 18. In **Mississippi**, record-setting highs for January 18 included 79°F in **Jackson** and **Greenwood**. In **Florida**, **Tallahassee's** high of 84°F on the 19th set a January record; the previous mark of 83°F had been achieved on January 2, 2022, and several earlier dates. Other **Southeastern** daily-record highs on January 19, before cooler air arrived, included 84°F in **Jacksonville, FL**; 73°F in **Raleigh-Durham, NC**; and 71°F in **Chattanooga, TN**.

As the week began, locally heavy rain and snow showers lingered across **California**, where record-setting rainfall totals for January 16 included 1.23 inches in **Stockton** and 1.05 inches in **Modesto**. Meanwhile, heavy precipitation spread into the **Great Basin** and **Southwest**. From January 14-18, snowfall in **Flagstaff, AZ**, totaled 36.9 inches. **Flagstaff's** snowiest days were January 15 and 17, with respective totals of 14.8 and 10.8 inches. The 14.8-inch total marked **Flagstaff's** snowiest calendar day since November 29, 2019, when 15.8 inches fell. Through January 21, **Flagstaff's** month-to-date snowfall climbed to 57.9 inches. January snowfall in **Flagstaff** was greater in 1949, with 104.8 inches; 1980, with 63.4 inches; and 1979, with 59.4 inches. Similarly, **Ely, NV**, received 33.8 inches of snow from January 1-21; the only higher January total occurred in 2016, with 35.4 inches. From January 15-17, **Ely** was buried by 18.9 inches of snow, aided by a daily-record sum of 8.9 inches on the 16th. In



Utah, Alta's month-to-date snowfall climbed to 128.1 inches, following a December total of 135.9 inches. By January 18, the focus for heavy precipitation shifted to the **central Plains**, where daily-record snowfall totals in **Nebraska** included 13.9 inches in **North Platte**, 10.8 inches in **Hastings**, 7.0 inches in **Valentine**, and 6.3 inches in **Norfolk**. For **North Platte** and **Hastings**, it was the snowiest January day; previous records had been 11.9 inches (on January 1, 1976) in **North Platte** and 9.8 inches (on January 31, 2002) in **Hastings**. **Denver, CO**, received 4.8 and 4.4 inches, respectively, on January 17-18, tying a record for the greatest number of January days in that location with at least 4 inches of snow. Elsewhere, daily-record snowfall totals included 6.2 inches (on the 18th) in **Sioux City, IA**, and 13.6 inches (on the 19th) in **Marquette, MI**. Meanwhile, **Evansville, IN**, netted a daily-record rainfall (1.82 inches) for January 18. By the 19th, **Northeastern** showers resulted in record-setting precipitation totals in locations such as **Bridgeport, CT** (1.11 inches), and **Islip, NY** (1.06 inches). At week's end, a new area of stormy weather delivered more snow across the **central Plains** and some heavy rain in the **Deep South**. On January 21, **Concordia, KS**, received snowfall with a liquid equivalency of 0.52 inch, a record for the date, while **Southern** daily-record rainfall amounts reached 2.35 inches in **Baton Rouge, LA**, and 1.83 inches in **McComb, MS**.

Mild weather continued across **Alaska**, except across the **western tier of the mainland**. Weekly temperatures ranged from more than 5°F below normal in **western Alaska** to at least 10°F above normal in several locations across the **eastern half of the state**. **Nome** dipped to -20°F or lower for the first time this winter on January 19, with a reading of -26°F. The following days (January 20-21), **Nome** registered lows of -27 and -25°F, respectively. Meanwhile, significant precipitation was primarily confined to **southern Alaska**. **Yakutat** received at least an inch of precipitation each day from January 19-21, totaling 4.44 inches. Similarly, **Ketchikan** reported more than 2 inches of rain on January 17, 19, and 20. Farther south, **Hawaii's** short-term dry spell continued, except on **Kauai**. **Lihue, Kauai**, collected 1.09 and 1.23 inches of rain, respectively, on January 19 and 21, lifting the month-to-date total to 2.36 inches (124 percent of normal). **Lihue** also posted daily record-tying highs of 83°F on January 17 and 21. At the state's other major airport observation sites, January 1-21 rainfall ranged from 0.04 inch (2 percent of normal) in **Kahului, Maui**, to 0.29 inch (6 percent) in **Hilo**, on the **Big Island**. **Hilo** also tied a daily-record high, logging 87°F on January 20.



National Weather Data for Selected Cities

Weather Data for the Week Ending January 21, 2023

Data Provided by Climate Prediction Center

STATES AND STATIONS		TEMPERATURE °F						PRECIPITATION							RELATIVE HUMIDITY PERCENT		NUMBER OF DAYS			
		AVERAGE MAXIMUM	AVERAGE MINIMUM	EXTREME HIGH	EXTREME LOW	AVERAGE	DEPARTURE FROM NORMAL	WEEKLY TOTAL, IN.	DEPARTURE FROM NORMAL	GREATEST IN 24-HOUR, IN.	TOTAL, IN., SINCE DEC 1	PCT. NORMAL SINCE DEC 1	TOTAL, IN., SINCE JAN 1	PCT. NORMAL SINCE JAN 1	AVERAGE MAXIMUM	AVERAGE MINIMUM	90 AND ABOVE	32 AND BELOW	.01 INCH OR MORE	.50 INCH OR MORE
AK	ANCHORAGE	28	18	31	9	23	6	0.20	0.00	0.14	4.38	258	0.48	89	96	71	0	9	3	0
	BARROW	-5	-13	3	-24	-9	0	0.02	-0.02	0.02	0.76	228	0.14	129	81	74	0	9	1	0
	FAIRBANKS	4	-11	11	-17	-3	6	0.13	-0.04	0.13	1.33	129	0.17	35	81	70	0	9	1	0
	JUNEAU	40	35	47	32	37	9	2.85	1.09	0.91	7.63	69	4.48	100	95	79	0	3	9	2
	KODIAK	37	30	40	21	33	2	2.31	-0.11	0.50	12.78	84	6.51	101	96	71	0	7	8	2
AL	NOME	7	-9	22	-27	-1	-6	0.06	-0.20	0.03	2.06	117	0.43	60	83	67	0	9	3	0
	BIRMINGHAM	64	42	69	25	53	9	2.40	0.96	0.77	9.94	116	5.69	154	88	48	0	1	4	2
	HUNTSVILLE	63	40	71	25	52	9	0.90	-0.52	0.40	9.32	96	3.22	85	88	50	0	1	4	0
	MOBILE	69	49	78	30	59	8	0.64	-0.99	0.47	7.00	71	2.25	52	89	50	0	1	5	0
	MONTGOMERY	68	41	76	27	55	7	0.15	-1.16	0.08	5.74	68	2.18	64	91	45	0	3	5	0
AR	FORT SMITH	64	39	73	31	52	12	0.03	-0.81	0.02	4.33	76	0.41	18	84	38	0	1	2	0
	LITTLE ROCK	64	46	70	28	55	14	1.73	0.77	0.77	9.94	127	3.78	138	89	52	0	1	4	1
AZ	FLAGSTAFF	33	17	39	-5	25	-6	5.02	4.41	1.16	9.42	267	7.11	438	93	72	0	9	7	6
	PHOENIX	60	46	61	38	53	-4	0.84	0.57	0.22	3.39	237	1.38	200	83	42	0	0	5	0
	PRESCOTT	41	28	45	21	35	-5	2.02	1.65	0.57	4.19	215	3.30	346	94	63	0	6	6	1
CA	TUCSON	58	41	63	28	49	-5	2.57	2.33	0.58	4.00	248	2.76	424	86	38	0	1	5	3
	BAKERSFIELD	54	41	57	36	47	-2	0.42	0.08	0.16	3.42	170	1.81	200	92	60	0	0	5	0
	EUREKA	51	37	54	32	44	-4	0.35	-1.55	0.29	13.64	103	4.60	90	94	79	0	1	5	0
	FRESNO	56	41	73	36	49	1	0.44	-0.17	0.20	8.61	249	4.10	247	98	58	0	0	3	0
	LOS ANGELES	59	47	62	43	53	-5	1.63	0.80	0.69	9.32	208	6.87	307	85	52	0	0	3	2
CO	REDDING	54	36	58	29	45	-3	0.84	-0.92	0.55	17.42	160	9.22	204	90	46	0	1	4	1
	SACRAMENTO	54	40	55	32	47	-1	1.51	0.45	0.40	13.24	213	5.45	197	95	57	0	1	5	0
	SAN DIEGO	61	48	63	42	55	-4	3.67	3.09	1.33	7.71	239	6.17	397	86	53	0	0	7	3
	SAN FRANCISCO	56	45	57	40	51	-1	2.79	1.68	0.94	19.72	278	10.13	344	86	57	0	0	5	3
	STOCKTON	55	41	57	34	48	0	3.37	2.59	1.45	15.59	352	7.06	351	94	56	0	0	5	2
CT	ALAMOSA	36	4	43	-7	20	3	0.25	0.15	0.12	0.52	89	0.50	213	94	49	0	9	3	0
	CO SPRINGS	42	24	51	15	33	1	0.21	0.12	0.08	0.89	204	0.38	186	76	35	0	8	4	0
	DENVER INTL	36	20	47	8	28	-4	1.23	1.12	0.52	2.61	415	1.46	530	92	55	0	9	4	1
	GRAND JUNCTION	38	28	44	22	33	5	0.78	0.59	0.37	2.30	216	1.05	223	95	68	0	8	4	0
	PUEBLO	47	17	57	7	32	0	0.13	0.04	0.03	0.32	65	0.19	92	86	34	0	9	6	0
DC	BRIDGEPORT	44	31	54	27	38	7	1.13	0.24	1.11	6.75	105	2.68	111	80	50	0	5	3	1
	HARTFORD	43	30	52	26	36	10	1.17	0.25	1.09	7.70	117	3.26	131	82	47	0	7	4	1
	WASHINGTON	50	35	60	29	43	6	0.17	-0.66	0.09	4.35	78	0.59	27	85	45	0	3	3	0
	WILMINGTON	49	32	58	27	41	8	0.70	-0.23	0.69	6.45	103	1.26	52	80	43	0	5	2	1
	DAYTONA BEACH	72	43	82	32	58	-1	0.15	-0.63	0.15	1.96	45	0.85	43	96	37	0	1	1	0
FL	JACKSONVILLE	71	39	84	29	55	1	0.01	-0.99	0.01	1.61	31	1.40	60	96	36	0	3	1	0
	KEY WEST	75	62	80	53	69	-1	0.00	-0.52	0.00	4.12	118	0.08	5	88	59	0	0	0	0
	MIAMI	77	55	84	44	66	-2	0.00	-0.52	0.00	1.75	46	0.03	2	85	47	0	0	0	0
	ORLANDO	73	46	82	36	60	-1	0.00	-0.72	0.00	1.80	42	0.87	48	94	37	0	0	0	0
	PENSACOLA	72	51	80	32	62	9	0.38	-1.06	0.20	6.77	74	1.31	35	89	48	0	1	2	0
GA	TALLAHASSEE	70	40	84	26	55	3	0.41	-0.91	0.25	3.37	45	1.31	40	95	44	0	3	3	0
	TAMPA	71	50	80	40	60	-1	0.17	-0.58	0.12	3.56	80	1.17	63	87	45	0	0	3	0
	WEST PALM BEACH	77	52	85	40	64	-2	0.00	-1.03	0.00	3.48	57	0.01	0	88	42	0	0	0	0
	ATHENS	61	40	73	25	50	6	0.39	-0.83	0.17	10.55	138	5.83	181	89	37	0	3	4	0
	ATLANTA	61	43	72	29	52	8	0.57	-0.72	0.22	7.28	91	3.87	115	85	40	0	1	5	0
HI	AUGUSTA	64	37	74	21	50	3	0.34	-0.75	0.15	6.13	91	2.39	83	94	37	0	3	3	0
	COLUMBUS	65	40	74	28	53	5	0.24	-0.91	0.11	5.76	72	4.19	134	91	42	0	3	4	0
	MACON	66	40	75	25	53	5	0.54	-0.67	0.16	6.69	86	4.69	149	94	42	0	3	4	0
	SAVANNAH	68	43	78	29	56	5	0.00	-0.98	0.00	2.48	44	0.76	32	83	33	0	3	0	0
	HILO	83	66	87	64	75	3	0.27	-1.94	0.21	7.79	44	0.31	5	90	55	0	0	3	0
IA	HONOLULU	83	71	84	68	77	3	0.00	-0.47	0.00	2.28	63	0.05	3	85	56	0	0	0	0
	KAHULUI	84	62	87	61	73	0	0.00	-0.69	0.00	3.84	83	0.04	2	88	51	0	0	0	0
	LIHUE	82	68	83	64	75	3	1.46	0.79	1.07	6.33	94	1.49	73	88	61	0	0	4	1
	BURLINGTON	44	33	61	25	38	15	0.65	0.23	0.46	2.29	77	1.48	136	89	66	0	5	5	0
	CEDAR RAPIDS	38	29	50	20	34	15	1.26	1.00	0.42	1.87	81	1.57	224	96	82	0	7	5	0
ID	DES MOINES	39	30	54	24	35	13	0.95	0.66	0.67	3.54	149	1.62	207	94	75	0	7	5	1
	DUBUQUE	37	29	45	18	33	14	2.01	1.64	0.79	4.99	181	2.78	292	98	80	0	7	7	2
	SIOUX CITY	34	21	41	7	28	8	0.91	0.72	0.53	2.94	195	1.28	249	95	80	0	9	4	1
	WATERLOO	38	29	49	19	34	15	1.34	1.03	0.55	3.74	171	2.09	281	89	75	0	7	4	1
	BOISE	41	25	50	13	33	1	0.29	-0.11	0.29	2.51	96	0.67	62	84	54	0	8	1	0
IL	LEWISTON	44	31	49	25	37	1	0.01	-0.30	0.01	1.50	77	0.32	39	88	61	0	6	1	0
	POCATELLO	31	18	40	10	24	-1	0.38	0.06	0.37	2.51	127	0.92	109	88	68	0	9	2	0
	CHICAGO/O'HARE	44	34	52	26	39	14	0.74	0.16	0.23	4.19	115	2.05	134	87	63	0	3	4	0
	MOLINE	44	34	57	25	39	16	1.28	0.81	0.43	3.73	113	2.07	164	87	66	0	4	5	0
	PEORIA	44	35	55	29	39	14	0.92	0.31	0.41	4.02	105	1.37	84	92	67	0	3	4	0
IN	ROCKFORD	41	32	48	23	37	15	1.18	0.71	0.41	4.18	132	1.65	135	92	72	0	3	4	0
	SPRINGFIELD	44	33	54	25	38	11	1.11	0.53	0.78	3.36	90	1.28	80	91	65	0	6	4	1
	EVANSVILLE	53	36	62	25	45	11	2.17	1.21	1.82	7.69	120	4.15	159	93	54	0	2	4	1
	FORT WAYNE	45	31	53	19	38	13	1.53	0.79	0.43	4.15	93	1.97	98	92	66	0	5	6	0
	INDIANAPOLIS	47																		

Weather Data for the Week Ending January 21, 2023

STATES AND STATIONS		TEMPERATURE °F						PRECIPITATION							RELATIVE HUMIDITY PERCENT		NUMBER OF DAYS			
		AVERAGE MAXIMUM	AVERAGE MINIMUM	EXTREME HIGH	EXTREME LOW	AVERAGE	DEPARTURE FROM NORMAL	WEEKLY TOTAL, IN.	DEPARTURE FROM NORMAL	GREATEST IN 24-HOUR, IN.	TOTAL, IN., SINCE DEC 1	PCT. NORMAL SINCE DEC 1	TOTAL, IN., SINCE JAN 1	PCT. NORMAL SINCE JAN 1	AVERAGE MAXIMUM	AVERAGE MINIMUM	TEMP. °F		PRECIP	
																	90 AND ABOVE	32 AND BELOW	01 INCH OR MORE	.50 INCH OR MORE
KY	WICHITA	55	32	63	23	44	10	0.87	0.64	0.60	1.74	95	0.96	159	86	44	0	5	2	1
	LEXINGTON	54	34	64	20	44	11	1.04	0.07	0.31	8.63	127	5.25	206	89	43	0	4	6	0
	LOUISVILLE	56	36	65	26	46	10	1.09	0.14	0.30	7.53	112	4.28	165	87	48	0	3	7	0
LA	PADUCAH	57	39	65	24	48	13	1.59	0.49	1.15	10.04	138	5.59	188	90	47	0	3	5	1
	BATON ROUGE	72	53	83	32	63	11	2.78	0.86	2.35	11.54	113	4.28	88	93	56	0	1	3	1
	LAKE CHARLES	68	54	76	38	61	8	0.96	-0.83	0.79	11.43	123	2.20	47	96	66	0	0	4	1
MA	NEW ORLEANS	72	56	81	36	64	10	0.61	-0.90	0.44	10.09	113	2.07	51	92	53	0	0	4	0
	SHREVEPORT	70	51	81	37	61	13	0.00	-1.27	0.00	0.00	0	0.00	0	92	49	0	0	0	0
	BOSTON	41	32	52	29	37	7	1.33	0.37	0.79	6.76	98	3.07	119	87	59	0	7	8	1
MD	WORCESTER	38	30	48	26	34	9	1.49	0.48	1.03	10.02	144	3.92	149	84	59	0	7	9	1
	BALTIMORE	51	34	57	28	42	8	0.16	-0.74	0.16	5.26	87	0.48	21	81	40	0	4	1	0
	CARIBOU	28	17	31	1	22	11	1.07	0.20	0.40	8.34	142	3.83	170	86	73	0	9	5	0
ME	PORTLAND	37	26	47	11	31	8	1.23	0.25	0.47	8.00	112	4.05	154	94	60	0	9	7	0
	ALPENA	37	27	42	21	32	13	1.18	0.64	0.45	3.54	107	2.08	147	96	70	0	7	5	0
	GRAND RAPIDS	41	32	46	20	36	12	1.03	0.28	0.29	3.23	73	1.78	91	93	67	0	3	6	0
MI	HOUGHTON LAKE	36	28	40	23	32	13	0.90	0.39	0.30	2.82	91	1.51	115	94	72	0	7	6	0
	LANSING	41	32	46	22	37	13	0.78	0.18	0.44	2.33	66	1.35	83	89	63	0	5	7	0
	MUSKEGON	44	35	50	26	39	13	1.65	0.93	0.43	3.44	80	2.26	121	86	65	0	3	7	0
MN	TRAVERSE CITY	39	33	44	28	36	13	0.76	0.27	0.45	1.80	58	1.15	87	86	64	0	4	6	0
	DULUTH	31	24	35	17	27	17	1.26	1.01	0.33	4.99	225	1.78	240	91	80	0	9	6	0
	INT_L FALLS	30	19	38	4	25	20	0.00	-0.22	0.00	0.30	18	0.00	0	88	74	0	9	0	0
MO	MINNEAPOLIS	33	27	37	17	30	14	1.26	1.02	0.53	4.38	236	2.61	385	93	78	0	9	5	2
	ROCHESTER	32	25	36	16	29	14	0.95	0.68	0.37	3.99	199	2.38	330	97	85	0	9	4	0
	ST. CLOUD	33	27	38	18	30	19	0.55	0.37	0.17	3.53	254	1.64	320	93	80	0	9	5	0
MS	COLUMBIA	52	35	67	23	44	13	0.34	-0.28	0.32	2.15	57	0.94	58	85	55	0	3	3	0
	KANSAS CITY	49	34	60	27	41	13	0.42	0.09	0.28	2.69	111	1.51	179	83	58	0	3	3	0
	SAINT LOUIS	50	36	62	22	43	11	0.71	-0.03	0.61	3.67	81	1.72	85	83	54	0	3	3	1
MT	SPRINGFIELD	57	34	69	24	45	11	0.68	-0.06	0.62	4.53	97	2.31	114	86	49	0	3	2	1
	JACKSON	68	48	79	28	58	11	2.89	1.35	1.13	10.17	112	4.55	115	94	47	0	1	6	2
	MERIDIAN	67	43	77	27	55	7	1.87	0.24	1.14	8.00	85	4.00	97	95	51	0	1	4	1
NC	TUPELO	65	42	76	26	54	11	0.93	-0.45	0.55	9.72	102	2.56	71	87	43	0	1	7	1
	BILLINGS	41	26	45	23	34	7	0.08	-0.07	0.04	0.69	70	0.08	19	85	51	0	9	2	0
	BUTTE	28	7	36	-5	17	-3	0.33	0.22	0.16	0.88	110	0.40	126	97	72	0	9	3	0
ND	CUT BANK	40	26	48	24	33	11	0.00	-0.06	0.00	0.00	0	0.00	0	87	57	0	9	0	0
	GLASGOW	26	16	34	4	21	6	2.72	2.59	1.36	3.62	478	2.74	789	89	80	0	9	2	2
	GREAT FALLS	40	26	45	22	33	8	0.34	0.19	0.16	1.75	187	0.84	205	92	58	0	9	4	0
NE	HAVRE	33	18	37	1	25	8	0.54	0.43	0.14	2.04	277	0.57	171	92	79	0	9	4	0
	MISSOULA	36	26	38	19	31	6	0.20	-0.06	0.08	1.66	92	0.40	55	95	71	0	9	4	0
	ASHEVILLE	56	32	63	23	44	6	0.24	-0.97	0.14	6.43	88	2.86	91	87	36	0	4	2	0
NC	CHARLOTTE	58	39	69	24	49	7	0.38	-0.62	0.19	7.76	125	3.22	121	85	35	0	3	2	0
	GREENSBORO	55	36	65	23	46	6	0.18	-0.83	0.08	6.24	108	2.48	96	82	35	0	4	3	0
	HATTERAS	55	41	65	35	48	0	0.09	-1.29	0.04	3.87	46	0.59	16	87	60	0	0	2	0
ND	RALEIGH	59	38	73	25	48	7	0.26	-0.73	0.13	5.13	85	1.49	57	80	36	0	4	2	0
	WILMINGTON	64	40	75	26	52	5	0.00	-1.09	0.00	2.36	36	0.20	7	85	34	0	3	0	0
	BISMARCK	28	17	35	2	22	10	0.01	-0.11	0.01	2.11	216	0.01	3	91	77	0	9	1	0
NE	DICKINSON	28	19	38	13	23	7	0.00	-0.07	0.00	0.14	37	0.00	0	96	85	0	9	0	0
	FARGO	25	15	35	1	20	11	0.06	-0.13	0.02	2.04	140	0.07	13	98	86	0	9	4	0
	GRAND FORKS	23	15	27	3	19	13	0.00	-0.13	0.00	1.32	126	0.01	3	92	81	0	9	0	0
NE	JAMESTOWN	24	14	35	7	19	10	0.00	-0.09	0.00	0.43	72	0.00	0	90	78	0	9	0	0
	GRAND ISLAND	37	23	42	7	30	5	0.60	0.44	0.59	1.53	120	1.09	256	90	71	0	9	2	1
	LINCOLN	40	27	48	20	34	9	0.88	0.69	0.81	1.92	112	1.29	247	91	68	0	7	2	1
ND	NORFOLK	33	23	39	9	28	6	0.62	0.45	0.50	1.93	150	1.26	284	91	76	0	9	3	1
	NORTH PLATTE	37	19	43	-1	28	2	1.03	0.93	1.02	3.11	427	1.77	642	91	71	0	9	2	1
	OMAHA	39	28	49	20	34	10	0.61	0.41	0.51	2.19	124	1.15	212	96	73	0	7	4	1
NH	SCOTTSBLUFF	37	21	45	7	29	0	0.64	0.53	0.52	1.90	233	1.25	424	89	64	0	9	6	1
	VALENTINE	34	21	39	7	27	3	0.80	0.71	0.73	5.02	764	2.80	900	94	79	0	9	5	1
	CONCORD	38	26	47	12	32	10	0.88	0.11	0.39	7.00	120	2.99	142	90	51	0	9	6	0
NJ	ATLANTIC_CITY	49	32	58	27	40	6	0.61	-0.33	0.59	6.87	98	1.36	54	84	43	0	5	3	1
	NEWARK	49	34	57	29	41	9	0.96	-0.01	0.94	6.57	97	2.09	80	69	35	0	5	2	1
	ALBUQUERQUE	44	31	50	21	37	0	0.24	0.13	0.12	1.04	127	0.41	145	80	42	0	4	2	0
NV	ELY	25	8	33	-9	16	-10	2.06	1.83	0.54	4.54	370	3.04	543	96	79	0	9	7	2
	LAS VEGAS	53	40	58	33	47	-3	0.27	0.11	0.13	0.83	92	0.76	173	69	31	0	0	3	0
	RENO	37	22	42	12	30	-7	0.89	0.52	0.42	7.83	372	2.76	276	90	56	0	9	3	0
NY	WINNEMUCCA	35	22	44	4	29	-4	0.13	-0.15	0.13	3.19	214	0.78	104	87	61	0	7	1	0
	ALBANY	36	24	44	18	30	6	0.87	0.13	0.53	5.94	113	2.18	109	88	57	0	9	5	1
	BINGHAMTON	35	22	39	13	28	6	0.98	0.22	0.63	6.33	124	2.59	129	98	72	0	8	6	1
OH	BUFFALO	40	28	47	17	34	9	0.86	-0.11	0.38	12.40	195	2.62	101	94	61	0	7	6	0
	ROCHESTER	38	26	44	19	32	6	0.78	0.04	0.28	17.09	370	2.81	145	95	74	0	7	5	0
	SYRACUSE	37	24	43	13	30	7	1.44	0.72	0.62	6.67	126	3.50	175	93	70	0	8	6	1
OH	AKRON-CANTON	47	32	60	19	39	12	1.39	0.53	0.58	5.78	112	3.91	17						

Weather Data for the Week Ending January 21, 2023

STATES AND STATIONS		TEMPERATURE °F					PRECIPITATION							RELATIVE HUMIDITY PERCENT		NUMBER OF DAYS					
		AVERAGE MAXIMUM	AVERAGE MINIMUM	EXTREME HIGH	EXTREME LOW	AVERAGE	DEPARTURE FROM NORMAL	WEEKLY TOTAL, IN.	DEPARTURE FROM NORMAL	GREATEST IN 24-HOUR, IN.	TOTAL, IN., SINCE DEC 1	PCT. NORMAL SINCE DEC 1	TOTAL, IN., SINCE JAN 1	PCT. NORMAL SINCE JAN 1	AVERAGE MAXIMUM	AVERAGE MINIMUM	TEMP. °F		PRECIP		
																	90 AND ABOVE	32 AND BELOW	01 INCH OR MORE	.50 INCH OR MORE	
OK	TOLEDO	44	32	53	16	38	11	1.99	1.33	0.89	2.96	69	2.07	111	91	61	0	4	6	1	
	YOUNGSTOWN	46	28	57	15	37	10	1.41	0.54	0.68	5.56	100	3.99	169	92	57	0	7	8	1	
	OKLAHOMA CITY	61	38	66	30	49	11	0.24	-0.15	0.20	2.33	84	0.31	32	78	34	0	2	2	0	
OR	TULSA	60	35	68	25	48	9	0.89	0.43	0.85	3.48	94	0.93	75	89	40	0	4	2	1	
	ASTORIA	49	39	50	31	44	0	3.87	0.70	0.98	18.93	100	7.38	90	96	74	0	1	8	4	
	BURNS	33	9	38	-6	21	-6	0.19	-0.18	0.18	3.72	147	1.35	134	86	64	0	9	2	0	
	EUGENE	48	35	53	32	42	0	0.66	-1.05	0.30	7.54	63	2.53	54	98	69	0	1	7	0	
	MEDFORD	46	31	52	24	38	-2	0.30	-0.45	0.28	4.78	84	0.78	36	94	60	0	4	2	0	
	PENDLETON	46	31	52	24	39	4	0.01	-0.41	0.01	2.03	76	0.55	48	83	54	0	6	1	0	
	PORTLAND	48	40	53	32	44	2	0.82	-0.61	0.31	11.62	121	3.27	85	90	67	0	1	7	0	
	SALEM	54	40	70	34	47	5	0.96	-0.77	0.70	8.77	75	3.17	69	97	56	0	0	7	1	
	PA	44	28	52	18	36	6	0.89	-0.08	0.89	6.64	105	2.30	93	80	45	0	5	1	1	
	ERIE	43	29	53	12	36	8	1.72	0.74	0.98	5.75	84	4.70	176	94	65	0	5	5	1	
	MIDDLETOWN	46	31	51	26	39	8	0.41	-0.49	0.41	5.80	102	1.44	64	83	48	0	6	1	0	
	PHILADELPHIA	48	33	55	28	41	7	1.08	0.19	1.08	6.39	101	1.58	67	82	43	0	3	1	1	
	PITTSBURGH	45	29	58	15	37	9	1.40	0.52	0.71	4.77	93	3.11	137	92	57	0	5	7	1	
	WILKES-BARRE	41	26	50	17	34	6	0.79	0.02	0.76	5.58	116	1.93	97	88	54	0	6	2	1	
	WILLIAMSPORT	43	29	50	22	36	8	1.20	0.32	1.01	7.71	139	2.63	116	89	51	0	5	5	1	
	PROVIDENCE	42	31	53	29	37	7	1.35	0.20	1.20	9.57	124	3.57	118	87	58	0	8	4	1	
	SC	CHARLESTON	68	43	77	29	56	6	0.02	-0.97	0.02	2.34	40	0.68	27	83	30	0	1	1	0
	COLUMBIA	62	41	74	25	51	6	0.18	-0.82	0.08	4.76	75	1.76	67	91	37	0	3	3	0	
	FLORENCE	62	40	74	24	51	5	0.10	-0.75	0.05	3.87	67	1.16	50	86	34	0	3	2	0	
	GREENVILLE	58	37	68	21	47	5	1.01	-0.15	0.47	9.98	129	5.54	178	85	32	0	4	4	0	
	SD	ABERDEEN	26	16	37	-3	21	9	0.51	0.36	0.20	1.96	187	0.52	120	96	82	0	9	4	0
	HURON	27	19	32	3	23	8	0.19	0.03	0.06	2.07	190	0.33	78	95	83	0	9	5	0	
	RAPID CITY	38	24	48	14	31	6	0.46	0.37	0.18	1.30	223	0.61	267	97	73	0	9	4	0	
	SIOUX FALLS	31	22	38	13	26	9	0.57	0.42	0.28	***	***	***	88	77	0	9	4	0	0	
	BRISTOL	53	31	67	17	42	6	1.20	0.13	0.51	7.38	114	3.52	132	90	48	0	5	3	2	
	CHATTANOOGA	60	38	71	28	49	8	0.44	-1.02	0.18	9.15	101	3.09	82	87	43	0	3	5	0	
	KNOXVILLE	55	34	67	23	45	6	1.68	0.28	0.72	10.25	120	4.77	134	92	55	0	5	5	2	
	MEMPHIS	62	44	73	30	53	11	1.54	0.38	0.63	12.28	143	6.37	205	94	51	0	2	6	1	
	NASHVILLE	62	37	70	26	49	10	0.80	-0.36	0.28	6.87	93	2.47	83	88	43	0	2	5	0	
	TX	ABILENE	69	47	75	34	58	12	0.00	-0.31	0.00	0.46	22	0.00	0	61	24	0	0	0	0
	AMARILLO	58	33	70	22	46	7	0.00	-0.22	0.00	0.15	12	0.00	0	73	29	0	4	0	0	
	AUSTIN	74	51	82	46	62	10	0.01	-0.77	0.01	1.97	41	0.08	4	83	37	0	0	1	0	
	BEAUMONT	72	55	81	45	63	10	1.52	-0.12	1.50	8.39	92	2.76	67	97	61	0	0	2	1	
	BROWNSVILLE	80	62	85	53	71	8	0.11	-0.17	0.11	0.37	18	0.11	14	100	59	0	0	1	0	
	CORPUS CHRISTI	79	55	87	49	67	9	0.00	-0.37	0.00	0.35	12	0.04	3	95	50	0	0	0	0	
	DEL RIO	78	48	85	44	63	10	0.00	-0.18	0.00	0.02	1	0.02	4	69	22	0	0	0	0	
	EL PASO	57	39	66	24	48	1	0.08	-0.02	0.04	0.48	52	0.16	55	68	32	0	3	2	0	
	FORT WORTH	71	49	79	39	60	14	0.00	-0.74	0.00	2.37	49	0.00	0	80	32	0	0	0	0	
	GALVESTON	70	59	74	54	64	9	0.43	-0.87	0.29	4.87	65	1.70	52	93	67	0	0	2	0	
	HOUSTON	71	54	80	43	63	9	0.22	-0.91	0.12	4.82	70	0.99	35	97	55	0	0	2	0	
	LUBBOCK	61	37	70	24	49	8	0.04	-0.14	0.02	0.46	37	0.04	9	69	26	0	4	3	0	
	MIDLAND	65	40	71	27	53	7	0.03	-0.16	0.03	0.11	10	0.03	6	70	23	0	2	1	0	
	SAN ANGELO	71	42	79	32	56	9	0.00	-0.27	0.00	1.02	66	0.00	0	71	21	0	1	0	0	
	SAN ANTONIO	74	51	79	46	62	10	0.00	-0.58	0.00	0.48	14	0.01	0	80	39	0	0	0	0	
	VICTORIA	75	53	82	44	64	10	0.01	-0.79	0.01	4.91	112	3.48	171	97	51	0	0	1	0	
	WACO	71	43	80	30	57	10	0.00	-0.76	0.00	0.56	11	0.00	0	96	36	0	1	0	0	
	WICHITA FALLS	67	42	75	34	55	12	0.03	-0.32	0.03	2.06	84	0.03	3	70	26	0	0	1	0	
	SALT LAKE CITY	38	31	43	23	34	3	0.67	0.24	0.27	4.99	201	2.70	251	90	65	0	6	6	0	
	UT	LYNCHBURG	55	32	66	22	43	8	0.59	-0.45	0.25	7.68	126	2.10	80	80	32	0	4	3	0
	NORFOLK	55	36	70	31	45	4	0.10	-0.89	0.05	3.63	62	0.78	31	85	43	0	3	2	0	
	RICHMOND	56	35	66	27	46	8	0.21	-0.74	0.09	6.18	104	1.68	69	76	33	0	4	3	0	
	ROANOKE	56	34	68	23	45	8	0.50	-0.46	0.23	5.65	104	1.72	73	72	33	0	4	3	0	
	WASH/DULLES	49	33	58	26	41	7	0.19	-0.68	0.08	5.48	100	0.57	26	83	43	0	4	3	0	
	VT	BURLINGTON	31	21	38	14	26	6	0.56	-0.05	0.30	5.09	123	2.51	154	87	68	0	9	4	0
	WA	OLYMPIA	46	37	49	28	41	2	1.08	-1.29	0.49	11.24	81	3.62	60	97	79	0	2	7	0
	QUILLAYUTE	47	39	49	33	43	1	4.43	-0.34	0.90	25.66	99	11.05	92	100	86	0	0	8	5	
	SEATTLE-TACOMA	47	38	51	32	43	0	0.92	-0.80	0.46	10.36	102	2.87	65	90	69	0	1	5	0	
	SPOKANE	37	30	41	24	33	4	0.28	-0.29	0.10	4.78	123	1.24	80	99	81	0	7	6	0	
	WI	YAKIMA	43	26	47	19	35	3	0.04	-0.29	0.01	3.02	128	0.88	95	91	61	0	8	3	0
	EAU CLAIRE	34	28	39	17	31	17	1.13	0.83	0.33	2.82	132	1.80	234	91	75	0	5	6	0	
	GREEN BAY	36	29	41	17	33	15	1.00	0.59	0.28	3.06	108	1.38	129	93	75	0	5	6	0	
	LA CROSSE	36	30	41	18	33	14	1.27	0.90	0.41	4.41	182	2.39	257	92	73	0	5	6	0	
	MADISON	39	31	46	22	35	16	0.94	0.50	0.31	3.89	143	1.55	142	91	70	0	5	6	0	
	MILWAUKEE	43	35	49	27	39	15	0.84	0.31	0.31	3.56	109	1.29	94	85	64	0	3	6	0	
	WV	BECKLEY	47	30	60	12	39	7	1.34	0.41	0.59	4.72	84	1.95	83	88	52	0	5	5	2
	CHARLESTON	50	31	64	16	40	6	1.09	0.12	0.38	4.00	66	2.82	115	95	54	0	4	6	0	
	ELKINS	47	25	60	12																

2022 U.S. Weather Review

Annual “Weather Review” provided by USDA/WAOB; rankings provided by National Centers for Environmental Information.

For the second year in a row, more than 40 percent of the contiguous U.S. was in drought from start to finish, according to the *U.S. Drought Monitor*. By January 3, 2023, the country had endured 119 consecutive weeks with drought coverage greater than 40 percent, easily topping the 21st century record of 68 weeks, set from June 19, 2012 – October 1, 2013. During 2022, national drought coverage peaked at 62.95 percent on October 25, a number surpassed on just 9 weeks—all in July–October 2012—in the 23-year history of the *U.S. Drought Monitor*. The autumn 2022 peak in drought coverage was due to short-term dryness—as the nation experienced its driest September since 1956 and driest September–October period since 1987—superimposed on long-term drought. Elevated drought coverage in 2022 was partly driven by La Niña, which originally developed during the second half of 2020. La Niña persisting into a third consecutive cold season (2022–23), sometimes referred to as a “triple dip” event, is rare and has only happened two other times—from 1973–74 to 1975–76 and 1998–99 to 2000–01—in the modern record.

Some of the nation’s worst drought impacts stretched from the Pacific Coast to the Plains and western Corn Belt. For crops such as sorghum, predominantly grown on the central and southern Plains, hot, dry weather slashed yield potential. The southern Plains’ cotton crop also took a hit, with record-high abandonment estimated for Texas. Even the northern Plains, still recovering from the historic drought of 2021, experienced some lingering impacts, with winter grain prospects fading just prior to the 2022 harvest season. For the U.S. winter wheat crop, 2022 marked the third consecutive year with a declining yield, from 53.6 bushels per acre in 2019 to 50.9, 50.2, and 47.0 bushels, respectively, in 2020, 2021, and 2022. The previous observance of winter wheat yield declining 3 years in row occurred from 2000–02. For corn and soybeans, significant yield reductions compared to the previous year were observed on the Plains (from Nebraska southward) due to drought, and in parts of the Southeast due to an untimely June hot spell.

Rangeland and pastures across the western half of the country continued to suffer due to long-term drought, with stress expanding eastward in late summer and early autumn. Nationally, the 2022 growing season began with 56 percent of the rangeland and pastures rated in very poor to poor condition, according to USDA/NASS, a record for early May. Following some late-spring improvement, conditions trailed off again during the summer, with 52 percent of the rangeland and pastures rated very poor to poor by August 14. In the final report of the season, dated October 30, nearly half (48 percent) of the rangeland and pastures were rated very poor to poor. This marked the highest value for those two categories at the end of the growing season since October 28, 2012, when 54 percent of the rangeland and pastures were rated very poor to poor.

In the western U.S., there was a transition to long-term drought, as the region benefited from a robust summer monsoon circulation and a series of late-autumn and early-winter storms. Despite the obvious surface improvement, which led to improving vegetation condition and topsoil moisture, as well as reduced irrigation demands, the West continued to grapple with hydrological impacts such as groundwater shortages and low reservoir levels. By the end of November 2022, California’s primary 154 intrastate reservoirs held 13.1 million acre-feet of water, 66 percent of normal for that time of year and just 34 percent of capacity. On the same date, dams in the nearly depleted Colorado River basin held 15.1 million acre-feet of water, 45 percent of normal and 29 percent of capacity. As precipitation intensified late in the year across northern and

central California, adverse impacts included flash flooding and debris flows, especially on burn-scarred hillsides.

Generally, wildfires were not as active during 2022 as in many recent years, with U.S. burned acreage totaling just over 7.5 million acres—very close to the 10-year average of 7.3 million acres. Although this total exceeded the previous year’s acreage of 7.1 million acres, the 2022 sum included 3.1 million acres in Alaska, or more than 40 percent of the annual acreage. By comparison, U.S. wildfire acreage (including Alaska) topped 10 million acres in 2015, 2017, and 2020. Some of the most intense fires of 2022 struck early in the season, prior to the onset of the Southwestern monsoon circulation. In New Mexico, the two largest modern wildfires on record—the Calf Canyon/Hermits Peak Fire and the Black Fire—each charred well over 300,000 acres of vegetation.

Across the nation’s mid-section, there were several notable heavy-rain events. In late July, for example, flash flooding struck many areas, including the St. Louis metropolitan area and eastern Kentucky. In the latter region, catastrophic flooding resulted in more than three dozen fatalities. Later, the year ended with several significant events, including a pair of December blizzards. A severe cold wave accompanied and trailed the second blizzard, which stressed livestock across the northern Plains and upper Midwest—and led to regional travel disruptions by automobile and cascading nationwide impacts on air travel. In the storm’s wake, the coldest holiday weather in more than 30 years engulfed most areas east of the Rockies, leading to freeze concerns for crops such as citrus, sugarcane, and strawberries in winter agricultural regions of the Deep South, from southern Texas to central Florida. Southern Florida, however, escaped the freeze.

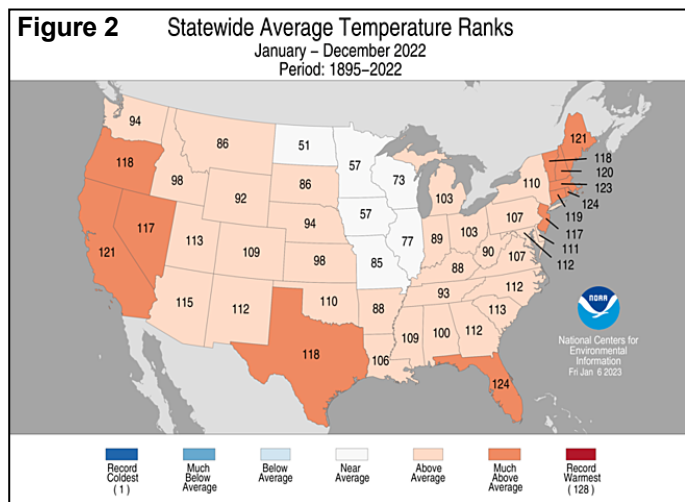
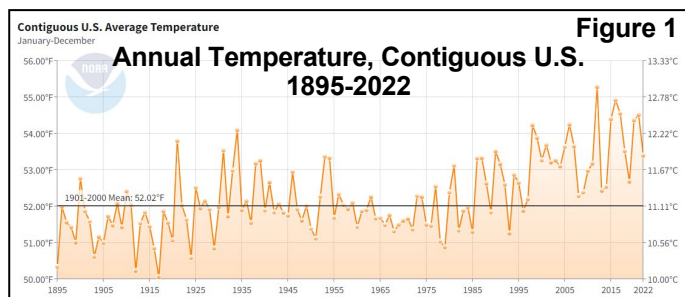
Despite the December cold snap, 2022 was overall a warm year, especially across the West, East, and South. Arguably the nation’s worst heat of 2022 gripped the West in early September, with many locations reporting all-time station records for any time of year. However, there were several other periods of extreme heat, especially west of the Mississippi River, with adverse impacts on a variety of crops. During a notable mid-June heat event on the central Plains, lack of nighttime cooling and high humidity levels led to livestock distress, including mortality.

Finally, the tropical Atlantic Basin experienced an average year, with 14 named storms and eight hurricanes. However, there was a remarkable quiet spell during the heart of the tropical season, with no named storms between short-lived Tropical Storm Colin in early July and Hurricane Danielle in early September. For the U.S. mainland, notable storm landfalls included Hurricanes Ian and Nicole, both of which struck Florida. Ian, a Category 4 storm at landfall on September 28 near Fort Myers, became third costliest U.S. hurricane on record—behind only Katrina (2005) and Harvey (2017)—and resulted in more than 150 fatalities, many due to storm-surge flooding. Nicole, a late-season Category 1 hurricane which struck near Vero Beach on November 10, was a much weaker system but resulted in beach erosion and brought some renewed fresh-water flooding. Outside the continental U.S., Category 1 Hurricane Fiona made landfall in southwestern Puerto Rico on September 18, causing an island-wide loss of electricity—and resulting in damage due to flash flooding and gusty winds.

According to the National Centers for Environmental Information (NCEI), calendar year 2022 wound up as the nation’s 18th-warmest, 27th-driest year on record, despite a relatively cool, wet

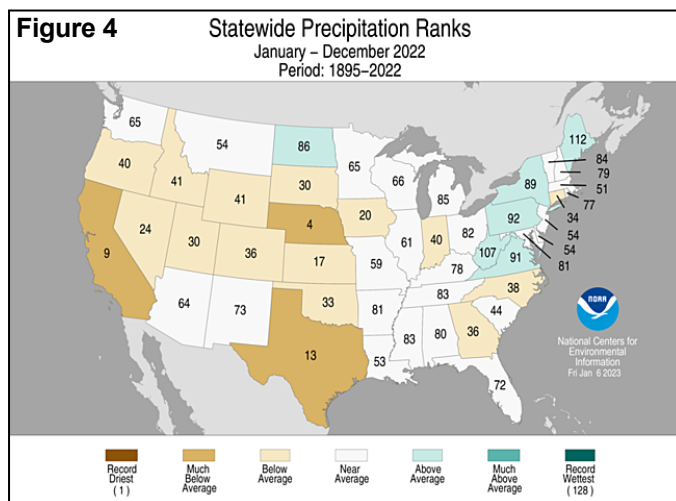
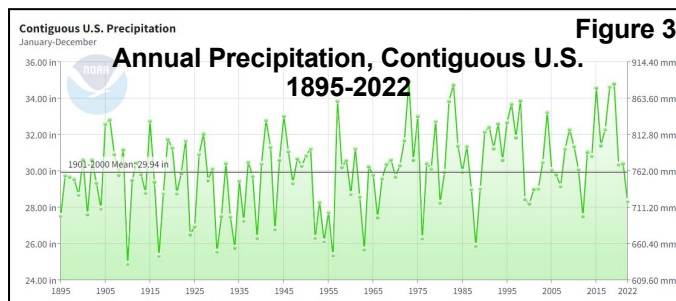
December. The nation's annual average temperature of 53.4°F was 1.4°F above the 20th century mean (figure 1). Annual state temperature rankings ranged from the 51st-coolest year in North Dakota to the fifth-warmest year in Florida and Rhode Island (figure 2). Top-ten rankings for annual warmth were also noted in California and all Atlantic Coast States from Connecticut to Maine.

Meanwhile, annual precipitation across the Lower 48 averaged 28.35 inches, or 95 percent of normal. In the last half-century, the only five drier years were 1988, with 25.90 inches; 1976, with 26.31 inches; 2012, with 27.53 inches; 2000, with 28.22 inches; and 1980, with 28.27 inches (figure 3). Annual precipitation rankings ranged from the fourth-driest year in Nebraska to the 17th-wettest year in Maine (figure 4). In California, despite December precipitation averaging more than 6 inches, it was the ninth-driest year on record.



Winter (December 2021 – February 2022)

The Western winter wet season petered out after December, as hopes for drought relief fizzled during the first 2 months of 2022. In early 2022, periods of heavier precipitation were mostly limited to the northern tier of the West, where several rounds of flooding occurred west of the Cascades. With the generally dry start to 2022, there was little overall change in the Western drought depiction, according to the *U.S. Drought Monitor*. In fact, coverage of moderate to exceptional drought (D1 to D4) in the 11-state Western region held nearly steady at 88 to 90 percent each week from January 4 to March 1, after peaking just below 95 percent on December 7, 2021. Some of the most acute dryness in early 2022 covered California and Nevada; it was the driest January-February combined during the 1895-2022 period of record in both states. According to the California Department of Water Resources, the Sierra Nevada began the dry spell with a snow-water equivalency of 16 inches—nearly 160 percent of the late-December average. By mid-March, the water equivalency stood at just over 16 inches, less than 60 percent of average for the date.



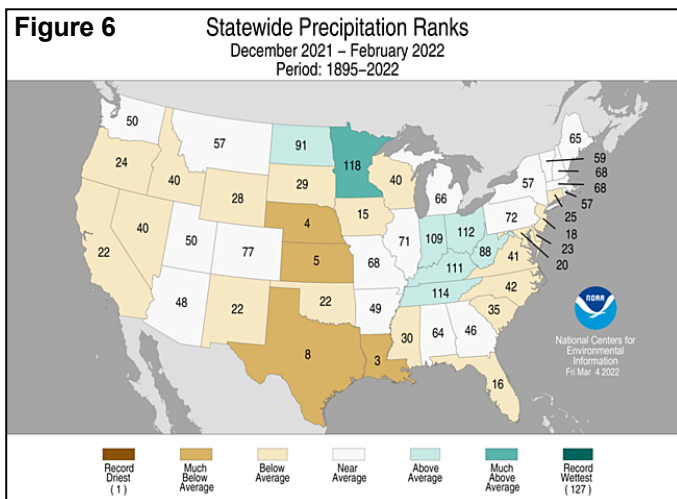
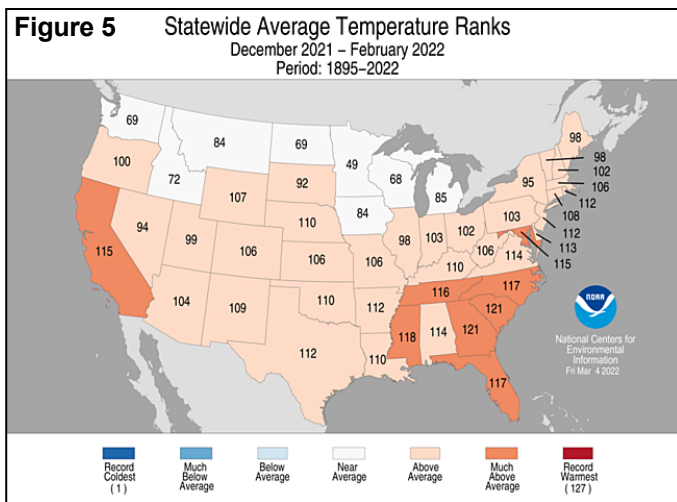
Farther east, drought also continued to dominate the landscape across the High Plains, leaving rangeland, pastures, and winter grains in uncommonly poor shape as spring approached. By February 27, topsoil moisture was rated 75 to 80 percent very short to short in Kansas, Oklahoma, and Texas. On that date, winter wheat was rated 75 percent very poor to poor in Texas, along with 65 percent in Oklahoma and 38 percent in Kansas. Texas also reported 69 percent of its rangeland, pastures, and oats were rated in very poor to poor condition. Meanwhile, a drier-than-normal winter led to development of short-term drought in parts of the South, especially from the Mississippi Delta westward, along the Gulf Coast, and in the southern Atlantic region.

In contrast, ample to locally excessive precipitation fell during winter from the Tennessee Valley into the eastern Corn Belt and lower Great Lakes region. Mid-February statistics indicated topsoil moisture was rated at least one-third surplus in Illinois, Michigan, Indiana, and Ohio. Late-winter flooding affected several basins; in Lafayette, Indiana, the Wabash River crested 9.43 feet above flood stage on February 18—the highest water level in that gauge location in 4 years, since late-February 2018. Winter wetness—in the form of frequent blizzards—also affected portions of the north-central U.S., including the Red River Valley of the North and the upper Great Lakes region, helping to eradicate drought or significantly reduce drought intensity.

Besides drought, the winter of 2021-22 featured some notable extremes. In December, multiple severe weather outbreaks resulted in more than 200 tornadoes, based on preliminary reports. Tragically, the December 10-11 outbreak was responsible for 87 tornado-related fatalities. Days later, on the 15th, the first-ever December derecho swept from the east-central Plains into the upper Midwest. December ended with winter wildfires ravaging areas near Boulder, Colorado. About a month later, a late-January blizzard along the northern Atlantic Coast helped to draw the coldest air in 4 years across Florida's peninsula. Elsewhere in

January, rare, mid-winter wildfires affected several areas, including the central California coast near Big Sur and the southern Plains.

According to NCEI, the winter of 2021-22 featured generally warm, dry conditions, with several exceptions. The national average temperature of 34.8°F was 2.5°F above the 1901-2000 mean, while precipitation averaged 5.76 inches—85 percent of normal. It was the nation's driest December-February period since 2001-02, when winter precipitation averaged 5.69 inches. Meanwhile, only Minnesota ranked in the cool half of the December-February historical distribution, reporting its 49th-coldest winter (figure 5). In contrast, top-ten values for winter warmth were noted in Georgia, Mississippi, and South Carolina. State precipitation rankings ranged from the third-driest winter in Louisiana to the tenth-wettest winter in Minnesota (figure 6). Along with Louisiana, top-ten values for winter dryness were observed in Kansas, Nebraska, and Texas.



Spring (March-May)

Drought coverage hit a 9-year high, peaking at 61.11 percent of the continental U.S. on March 8, according to the *U.S. Drought Monitor*. The last time national drought coverage exceeded 60 percent had been January 8, 2013, when the country was just starting to emerge from a record-breaking drought that had blanketed 65.45 percent of the Lower 48 States at its peak on September 25, 2012.

Subsequently, drought coverage fell to 49.30 percent by May 31, as a La Niña-driven storm track eased or eradicated drought across the North, as well as the mid-South, Mississippi Delta, and eastern sections of the central and southern Plains. As a result, the nation's second-longest modern stretch with 50 percent drought coverage ended at 27 weeks (November 23, 2021 – May 24, 2022). In the 21st century, the longest streak with more than half of the country affected by drought lasted 42 weeks, from June 26, 2012 – April 9, 2013.

Even with the reduction in drought coverage, serious impacts persisted from Oregon and California to southern sections of the Rockies and Plains. For example, spring rangeland and pasture conditions were the lowest of the 21st century, breaking a record set in 2021. U.S. conditions slightly improved during May, with rangeland and pastures rated very poor to poor decreasing from 56 to 46 percent between May 1 and 29. Meanwhile, winter wheat conditions remained nearly steady, as late-spring rainfall arrived too late to benefit the crop in many of the central and southern Plains' production areas. Nationally, 40 percent of the winter wheat was rated in very poor to poor condition at the end of May. Elsewhere, significant drought implications, including low reservoir levels and depleted soil moisture, persisted in the Southwest.

In stark contrast, the planting season progressed at a record-slow pace in parts of the north-central U.S. and proceeded sluggishly in the Midwest, amid frequent storms and periods of cold weather. By May 8, only 22 percent of the nation's intended corn acreage had been seeded. Although planting conditions eventually improved across the heart of the Midwest, with an additional 64 percent of the U.S. corn acreage planted during the 3 weeks ending May 29, major delays persisted in Minnesota and North Dakota. Those planting delays extended to other Northern crops, including spring wheat (73 percent planted, nationally, by May 29) and sugarbeets (75 percent, a record-slow pace for that date). Among 21st century years, only 2011 featured a slower spring wheat planting pace by May 29.

A cool spring also dominated the Northwest, allowing rangeland and pastures to begin recovering from long-term drought but slowing the development of winter wheat and spring-sown crops. In addition, Northwestern mountains retained considerable high-elevation snowpack, setting the stage for record-setting flooding along the Yellowstone River when heavy rain and warmer conditions arrived in mid-June. Elsewhere, less extreme conditions covered the eastern U.S., although warmer-than-normal weather prevailed. In addition, pockets of dryness expanded during spring, mainly from Georgia to the Carolinas and in coastal New England.

According to NCEI, the spring of 2022 featured generally warm, wet conditions, with some exceptions. The national average temperature of 52.2°F was 1.3°F above the 1901-2000 mean, while precipitation averaged 8.07 inches—102 percent of normal. It was the seventh time in the last 8 years—all but 2019—with a top-thirty ranking for spring warmth. However, several Northern States experienced below-normal temperatures, led by Washington with its 19th-coolest spring. Conversely, top-ten rankings for spring warmth were noted in Arizona, New Mexico, and Texas, along with seven Atlantic Coast States (figure 7). State precipitation rankings ranged from the sixth-driest spring in New Mexico to the fourth-wettest spring in North Dakota (figure 8).

Summer (June-August)

Drought coverage slightly decreased, from 49.30 to 45.53 percent, from May 31 to August 30, according to the *U.S. Drought Monitor*. Decreasing drought coverage and intensity in several areas, including the Four Corners States and the Northwest, contrasted

Figure 7 Statewide Average Temperature Ranks
March – May 2022
Period: 1895–2022

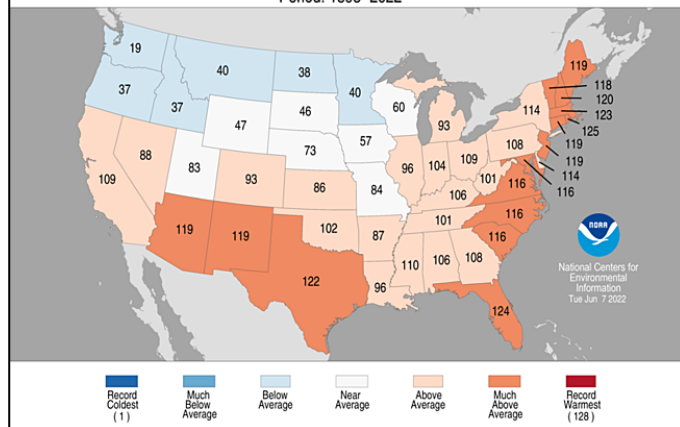
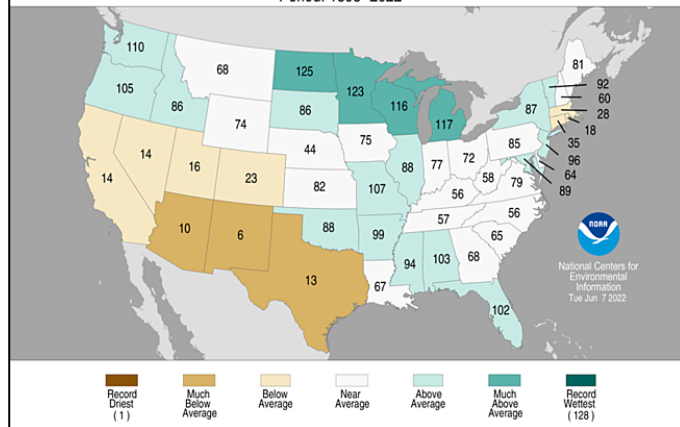


Figure 8 Statewide Precipitation Ranks
March – May 2022
Period: 1895–2022



with worsening conditions in parts of the mid-South, western Corn Belt, central and southern Plains, and the Northeast.

In addition, periods of excessive heat aggravated the effects of drought in portions of the West, South, and Northeast. Summer temperatures averaged at least 2 to 4°F above normal in many locations west of the Mississippi River, as well as scattered Northeastern communities. Among the major U.S. agricultural regions, only the eastern Corn Belt was spared from extreme heat. Some of the most extreme temperatures were observed across the Far West and the central and southern Plains, with profound heat- and drought-related impacts observed on crops such as cotton and sorghum. On August 28, near summer's end, more than one-third of the U.S. cotton (36 percent) and sorghum (44 percent) were rated in very poor to poor condition.

Rangeland and pastures in portions of the western and central U.S., as well as the Northeast, also suffered amid hot, dry conditions. By August 28, nearly one-half (46 percent) of the nation's rangeland and pastures were rated in very poor to poor condition, unchanged from the end of May. Very poor to poor ratings reached a summer peak of 52 percent on August 14, before late-summer rainfall across the south-central U.S. provided limited drought relief.

By mid-June, the two largest wildfires in modern New Mexico history—the Calf Canyon/Hermits Peak Fire and the Black Fire—had charred 341,735 and 325,136 acres, respectively. Until this year, New Mexico's largest fire had been the

Whitewater-Baldy Complex, which scorched 297,845 acres in May–July 2012. A robust, early-onset Southwestern monsoon circulation helped to extinguish those fires, starting in the second half of June, allowing the focus for wildfire activity to shift into the Pacific Coast States and the northern Rockies. Smoky conditions and late-summer degradations in air quality were common across California, the Great Basin, and the Northwest, with dozens of wildfires actively burning.

Midwestern crops, including corn and soybeans, experienced variable growing conditions. Crop concerns were greatest west of the Mississippi River, where hotter- and drier-than-normal conditions reduced yield potential. Nationally, 19 percent of the corn and 13 percent of the soybeans were rated in very poor to poor condition by late August. Those numbers were higher in much of the western Corn Belt, including Nebraska, where 34 and 28 percent, respectively, of the corn and soybeans were rated very poor to poor on August 28.

Meanwhile, a quick-hitting summer drought in the Northeast led to agricultural and hydrological impacts, such as reduced soil moisture, poor crop and pasture conditions, and low streamflow. Elsewhere, early-summer heat in the South—which adversely affected corn and other early-planted crops—was replaced by somewhat cooler, wetter weather in July and August. As a result, many Southern crops fared well, with more than two-thirds of the rice (70 percent) and peanuts (69 percent) rated in good to excellent condition by August 28.

According to NCEI, the contiguous U.S. endured its third-hottest summer on record, with a June–August average temperature of 73.92°F. This was 2.52°F above the 1901–2000 mean. Summer was hotter only in 1936 and 2021; in both of those years, the June–August average temperature was 74.00°F. Meanwhile, June–August precipitation averaged 8.18 inches (98 percent of normal) across the Lower 48 States—the 44th driest summer during the last 128 years, despite relatively wet August conditions. All states fell within the warmest half of the historical distribution. Wisconsin, with its 46th-warmest summer, was the “coolest” state. Top-ten rankings for summer warmth stretched across 20 states across the West, South, and Atlantic Coast. It was the second-hottest summer in Massachusetts, Rhode Island, and Texas (figure 9). State precipitation rankings ranged from the third-driest summer in Nebraska to the seventh-wettest summer in Arizona (figure 10). Top-ten rankings for summer dryness also included New Jersey and Massachusetts, while joining Arizona on the top-ten list for wetness were New Mexico and West Virginia.

Autumn (September–November)

Drought coverage in the continental U.S. decreased from an autumn peak of 62.95 percent on October 25 to 57.51 percent by November 29, according to the *U.S. Drought Monitor*. During the second half of autumn, decreasing drought coverage and intensity in many areas contrasted with worsening conditions across the central Plains.

The Plains' drought, along with several autumn cold snaps, was a detriment to winter wheat establishment. By November 27, more than one-quarter (26 percent) of the wheat crop was rated in very poor to poor conditions—highest in the final autumn report since 2012 (also 26 percent). On the same date, top winter wheat producer Kansas led the nation with 43 percent of its wheat rated very poor to poor, followed by Nebraska (39 percent) and Colorado (38 percent).

Figure 9 Statewide Average Temperature Ranks
June – August 2022
Period: 1895–2022

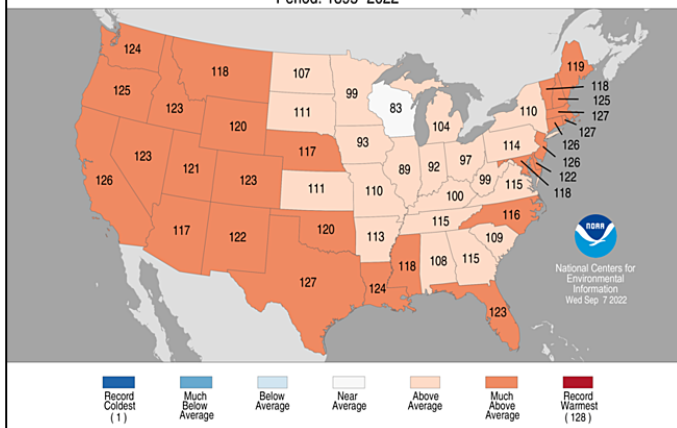
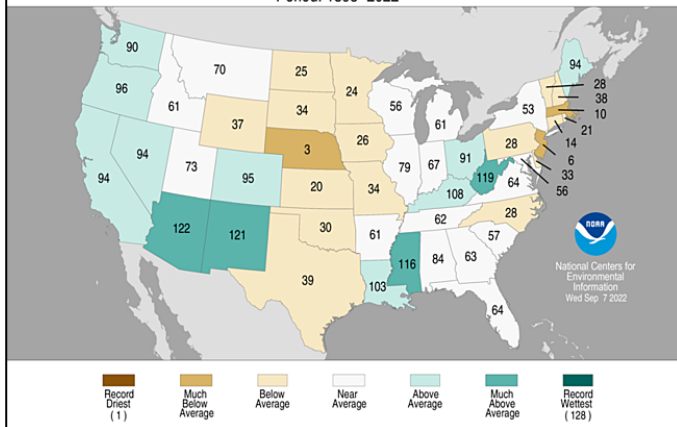


Figure 10 Statewide Precipitation Ranks
June – August 2022
Period: 1895–2022



One advantage of drier-than-normal autumn weather was a rapid fieldwork pace. With the U.S. experiencing its driest September since 1956 and driest September-October since 1987, harvest for a variety of crops quickly advanced. The U.S. soybean harvest was 96 percent complete by November 13, five percentage points ahead of the 5-year average. Similarly, 96 percent of the corn had been cut by November 20, six points ahead of average.

Autumn temperatures were highly variable. October freezes deep into the South prematurely curtailed grass growth, lowering pasture conditions. Additional cold weather in November, peaking around mid-month, limited winter wheat establishment. In contrast, September began amid a stunning Western heat wave, followed by another impressive warm spell in early November.

The tropical Atlantic Basin was active at times, following a remarkably quiet summer. On September 24, Ian developed between Hispaniola and the northern coast of South America. Soon, Ian made a quick, destructive traversal of western Cuba as a Category 3 hurricane on September 27. Ian reached peak intensity early on the 28th over the Gulf of Mexico as a Category 4 storm with winds near 155 mph, weakening only slightly (to 150 mph) before reaching Cayo Costa Island, Florida, near Fort Myers, later that day.

Nicole was the last of 14 named storms and eight hurricanes occurring during the 2022 Atlantic hurricane season. Shortly before making landfall near Vero Beach, Florida, on November 10, Nicole achieved Category 1 hurricane status, with sustained

winds near 75 mph. Across the remainder of the eastern U.S., Nicole was primarily a rain-producer, although antecedent dryness and the former hurricane's fast forward speed limited impacts. Still, Nicole's runoff in the upper Ohio Valley eventually coursed into the Mississippi River below Cairo, Illinois, providing a slight boost in critically low water levels. In mid- to late October, record-low water levels had been observed along the Mississippi River from New Madrid, Missouri, downstream to Greenville, Mississippi, with significant impacts on barge transportation. Those low levels mostly broke records from July 1988 or August 2012. In Cairo, Illinois, the Ohio River fell to a stage of 4.88 feet on October 17, the lowest level in that location since November 1901.

According to NCEI, the contiguous U.S. experienced its 24th-warmest autumn on record, with a September-November average temperature of 54.74°F. This was 1.19°F above the 1901–2000 mean. Meanwhile, precipitation averaged 5.92 inches (86 percent of normal) across the Lower 48 States—the 23rd-driest autumn in the last 128 years, despite relatively wet November conditions. It was the nation's fifth-driest autumn in the last six decades. State temperature rankings ranged from the 38th-coolest autumn in Tennessee to the fourth-warmest autumn in Maine (figure 11). Meanwhile, state precipitation rankings ranged from the fifth-driest autumn in Nebraska to the 20th-wettest autumn in Maine (figure 12).

Figure 11 Statewide Average Temperature Ranks
September – November 2022
Period: 1895–2022

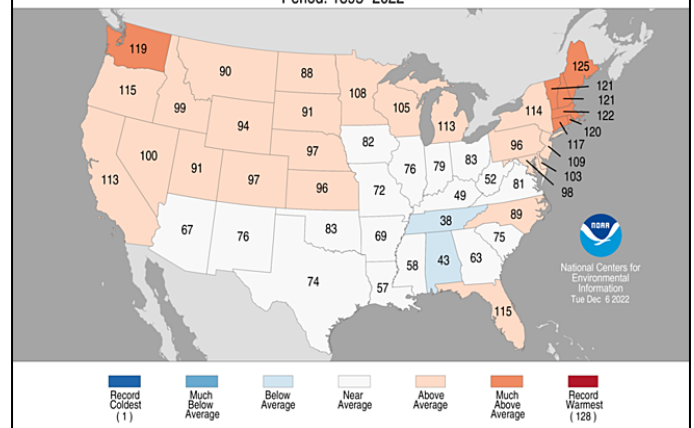
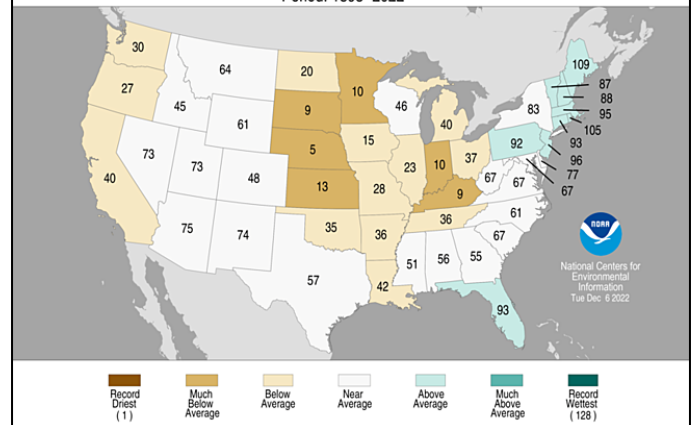


Figure 12 Statewide Precipitation Ranks
September – November 2022
Period: 1895–2022



December

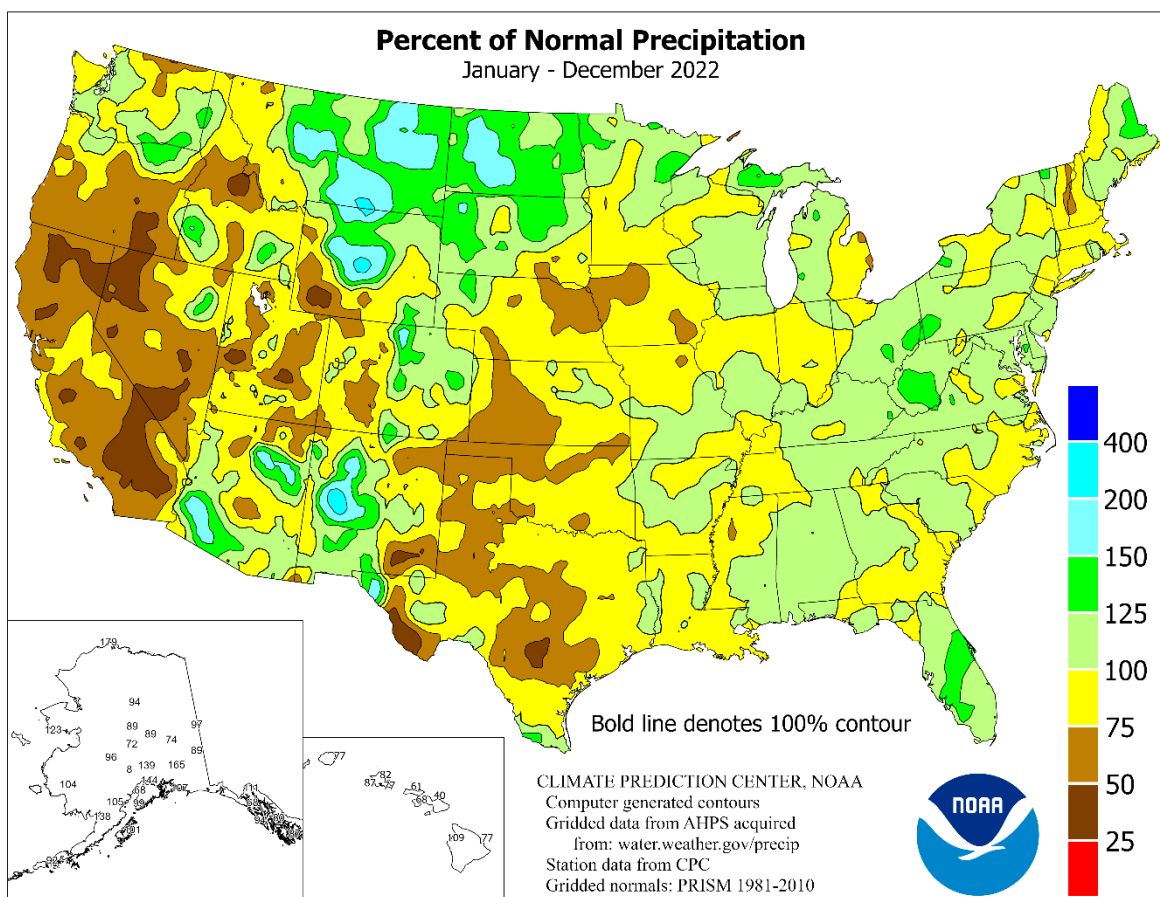
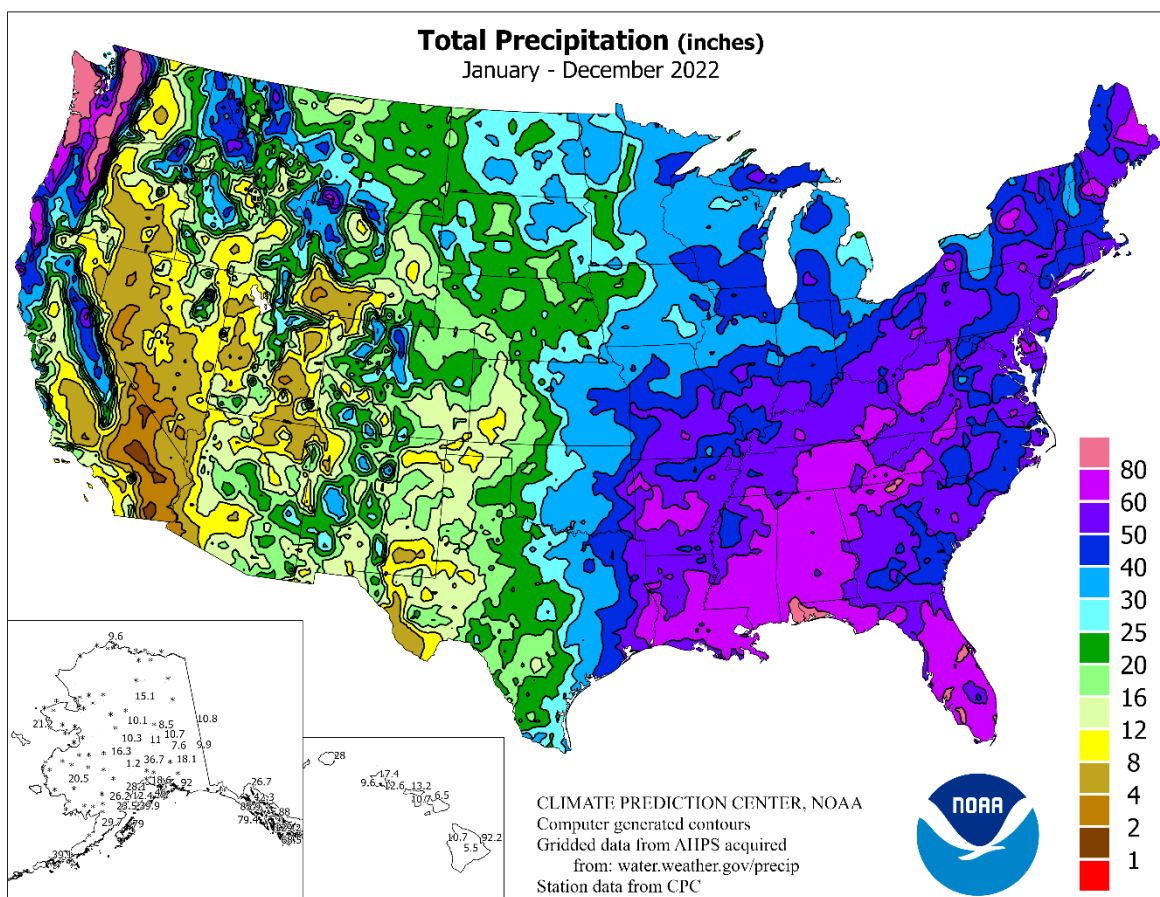
A complete summary appeared in the *Bulletin* dated Jan. 10, 2023.

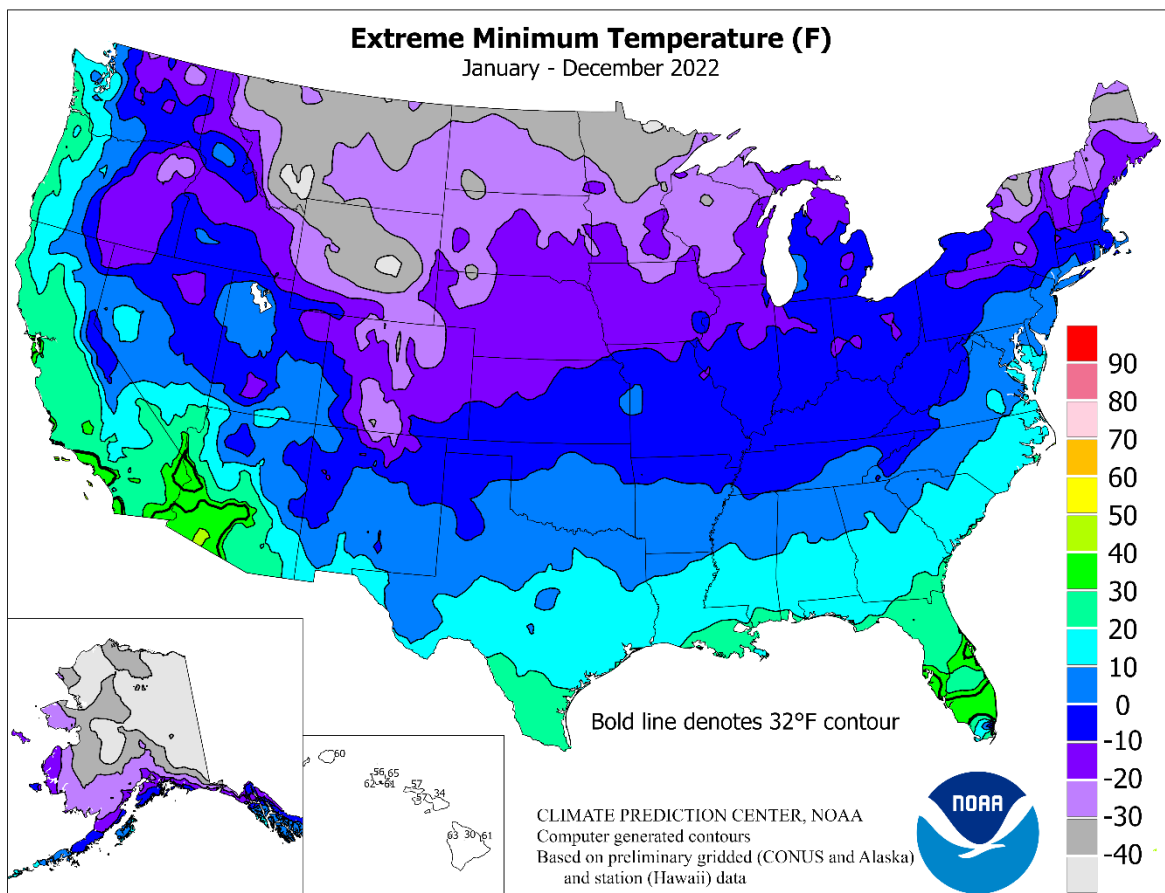
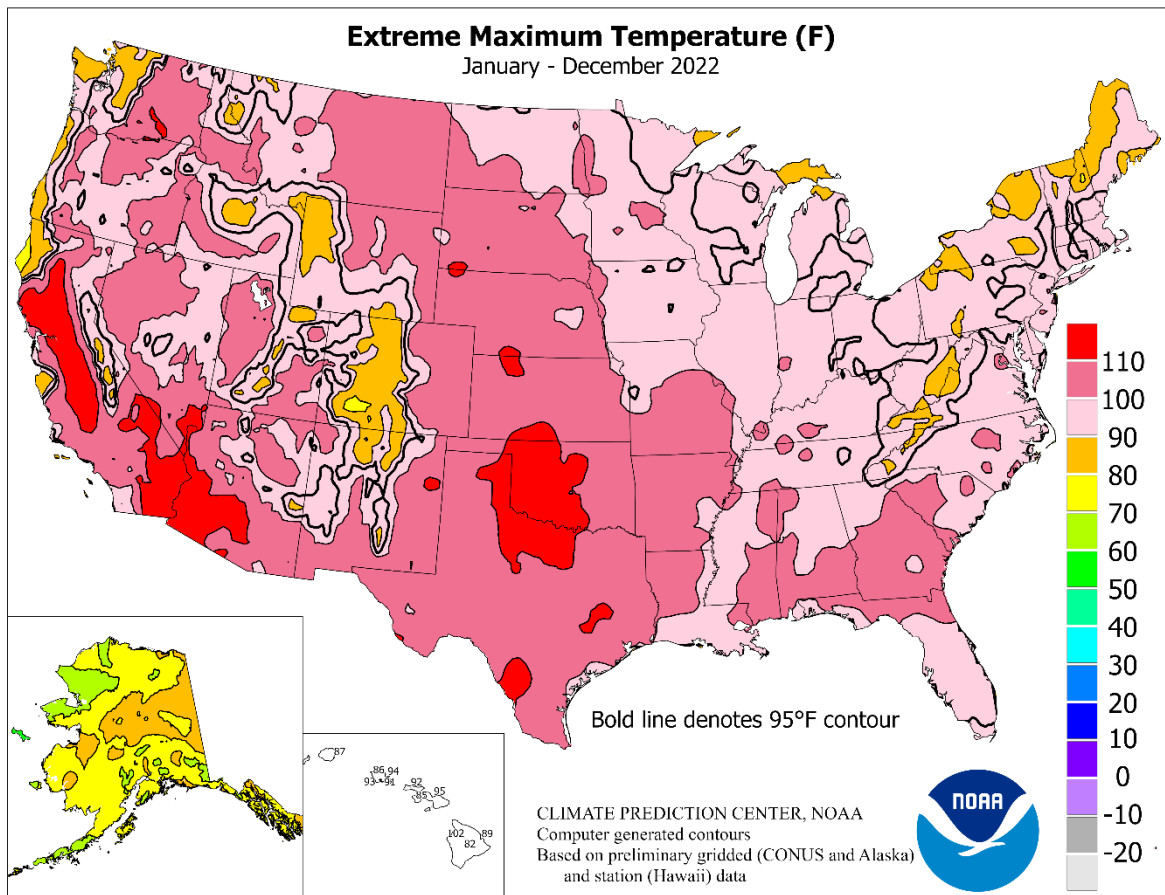
National Weather Data for Selected Cities

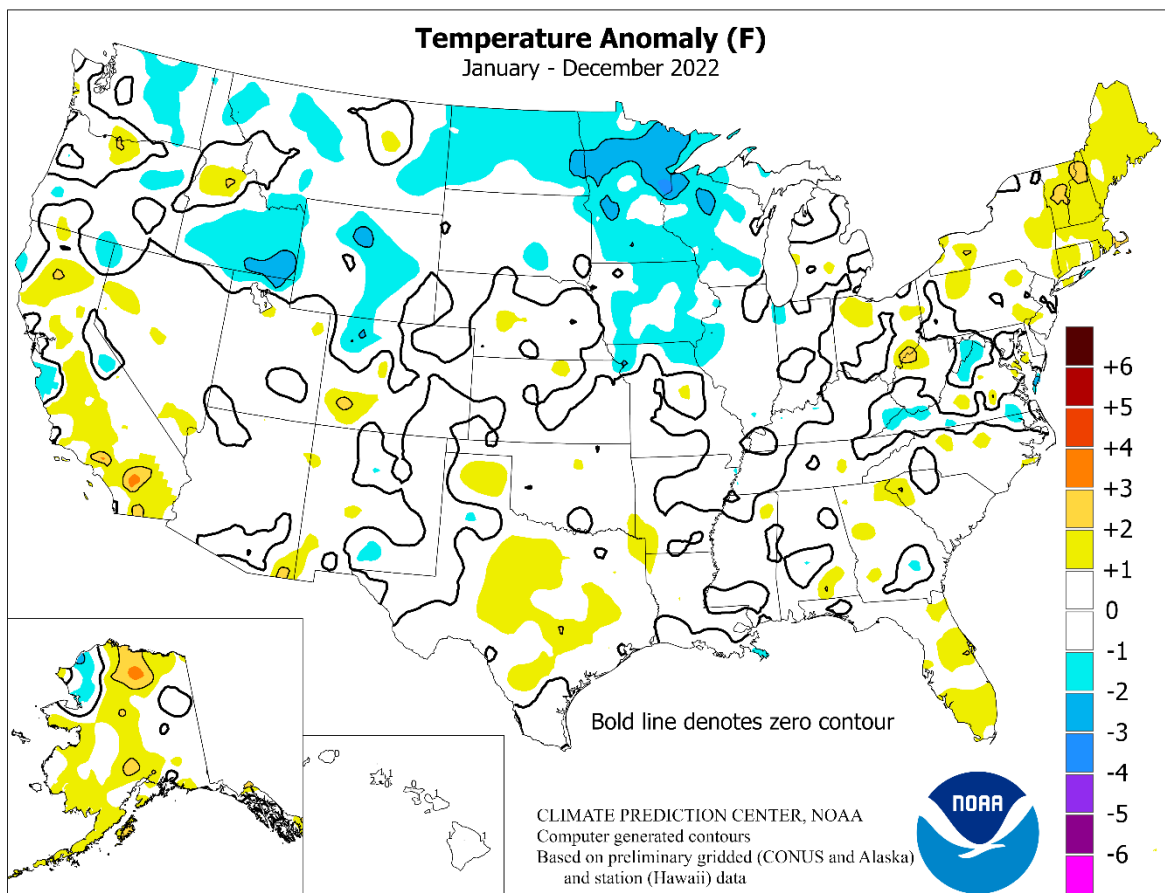
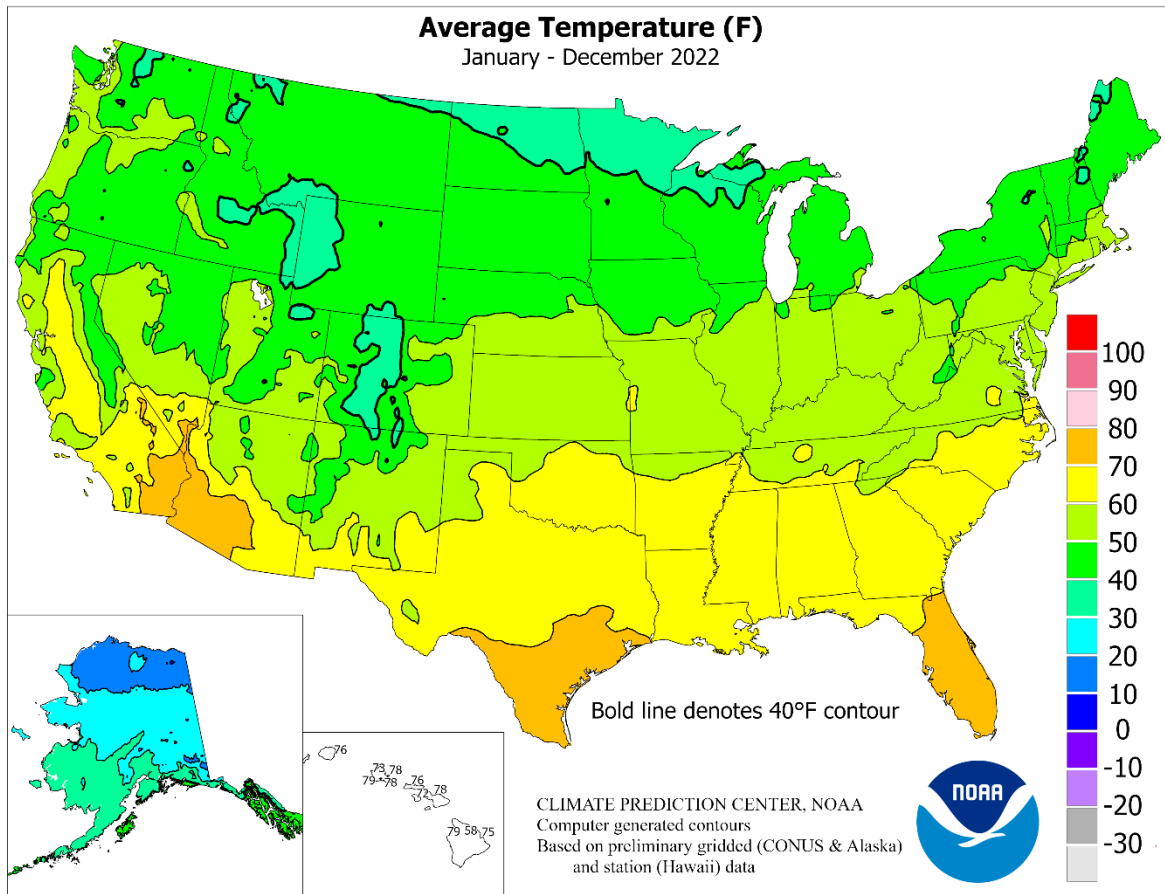
2022

Data Provided by Climate Prediction Center

STATES AND STATIONS		TEMP, °F		PRECIP.		STATES AND STATIONS		TEMP, °F		PRECIP.		STATES AND STATIONS		TEMP, °F		PRECIP.	
		AVERAGE	DEPARTURE	TOTAL	DEPARTURE			AVERAGE	DEPARTURE	TOTAL	DEPARTURE			AVERAGE	DEPARTURE	TOTAL	DEPARTURE
AK	ANCHORAGE	40	2	28.14	11.70												
	BARROW	16	0	9.60	4.24	KY	LEXINGTON	57	0	43.22	-6.62						
	FAIRBANKS	30	1	8.52	-3.15		LOUISVILLE	59	0	39.65	-8.70	OK	OKLAHOMA CITY	61	1	24.03	-12.35
	JUNEAU	43	1	85.92	18.93		PADUCAH	59	0	42.20	-8.13		TULSA	62	0	33.50	-7.44
	KODIAK	44	2	79.00	0.69	LA	BATON ROUGE	69	0	51.31	-10.62	OR	ASTORIA	52	0	70.30	0.03
	NOME	30	2	21.17	3.94		LAKE CHARLES	68	-1	42.93	-16.81		BURNS	46	0	7.88	-2.52
AL	BIRMINGHAM	64	0	52.63	-3.98		NEW ORLEANS	71	0	55.67	-7.67		EUGENE	54	1	30.89	-9.92
	HUNTSVILLE	62	-1	54.06	-0.22		SHREVEPORT	68	1	37.74	-13.68		MEDFORD	57	1	14.17	-4.26
	MOBILE	68	1	59.02	-8.06	MA	BOSTON	53	1	29.89	-13.69		PENDELTON	53	1	15.62	2.77
	MONTGOMERY	67	0	52.16	1.00		WORCESTER	50	2	48.01	-0.28		PORTLAND	56	1	39.79	2.88
AR	FORT SMITH	63	1	50.29	2.95	MD	BALTIMORE	57	1	46.50	1.49		SALEM	55	1	39.57	-0.48
	LITTLE ROCK	64	2	46.01	-4.42	ME	CARIBOU	42	1	43.50	2.80	PA	ALLENTOWN	52	-1	45.50	-1.84
AZ	FLAGSTAFF	47	1	17.21	-3.32		PORTLAND	48	0	54.60	6.48		ERIE	51	0	47.57	4.59
	PHOENIX	76	1	5.64	-1.58	MI	ALPENA	44	0	28.84	-0.83		MIDDLETOWN	55	0	40.82	-3.38
	PRESOTT	56	-1	11.43	-1.41		GRAND RAPIDS	49	-1	34.09	-5.30		PHILADELPHIA	58	2	39.45	-4.67
	TUCSON	71	1	6.05	-4.56		HOUGHTON LAKE	44	0	25.31	-2.68		PITTSBURGH	51	-1	37.28	-2.35
CA	BAKERSFIELD	68	2	4.12	-2.24		LANSING	50	1	32.55	-0.78		WILKES-BARRE	52	0	40.74	2.04
	EUREKA	51	-2	29.35	-11.05		MUSKEGON	50	0	31.83	-3.24		WILLIAMSPORT	52	0	40.00	-3.52
	FRESNO	67	2	6.31	-4.68		TRAVERSE CITY	47	0	29.15	0.09	RI	PROVIDENCE	53	1	45.39	-2.15
	LOS ANGELES	65	1	6.02	-6.22	MN	DULUTH	39	-2	32.83	1.65	SC	CHARLESTON	67	0	48.51	-4.00
	REDDING	66	2	16.43	-17.08		INT'L FALLS	37	0	35.28	9.91		COLUMBIA	65	0	40.50	-4.74
	SACRAMENTO	63	1	11.20	-6.94		MINNEAPOLIS	46	-1	23.86	-7.73		FLORENCE	65	0	37.31	-7.83
	SAN DIEGO	64	-1	5.81	-3.97		ROCHESTER	44	-1	34.78	0.11		GREENVILLE	61	0	53.70	4.03
	SAN FRANCISCO	59	0	13.27	-6.38		ST. CLOUD	43	0	25.07	-3.30	SD	ABERDEEN	44	0	19.20	-2.63
	STOCKTON	64	1	11.41	-2.04	MO	COLUMBIA	56	0	32.96	-8.48		HURON	46	0	16.43	-8.89
CO	ALAMOS	43	1	10.85	3.46		KANSAS CITY	56	1	33.65	-5.65		RAPID CITY	46	0	15.58	-1.87
	CO SPRINGS	51	1	11.40	-4.51		SAINT LOUIS	58	0	48.35	6.65		SIOUX FALLS	47	0	23.33	-4.52
	DENVER INTL	52	0	11.46	-3.03		SPRINGFIELD	57	0	41.22	-3.50	TN	BRISTOL	57	1	40.95	-2.91
	GRAND JUNCTION	54	0	9.21	0.15	MS	JACKSON	66	0	59.78	2.44		CHATTANOOGA	62	0	54.74	-0.26
	PUEBLO	53	0	9.33	-2.70		MERIDIAN	66	0	52.00	-4.52		KNOXVILLE	60	0	51.71	-0.24
CT	BRIDGEPORT	54	0	35.11	-8.98		TUPELO	64	1	50.68	-7.07		MEMPHIS	64	0	53.21	-1.73
	HARTFORD	53	1	46.89	-0.15	MT	BILLINGS	48	-1	14.90	0.59		NASHVILLE	62	1	50.89	0.39
DC	WASHINGTON	59	0	40.23	-1.59		BUTTE	39	-1	9.56	-3.20	TX	ABILENE	68	2	14.47	-10.77
DE	WILMINGTON	56	1	41.10	-4.24		CUT BANK	41	0	7.59	-3.19		AMARILLO	59	0	15.93	-3.73
FL	DAYTONA BEACH	73	1	44.65	-6.59		GLASGOW	45	1	9.47	-3.93		AUSTIN	71	1	19.99	-16.25
	JACKSONVILLE	69	0	47.42	-6.00		GREAT FALLS	44	-1	14.43	-0.33		BEAUMONT	70	0	50.89	-11.22
	KEY WEST	79	0	38.33	-2.09		HAYRE	44	0	10.32	-1.50		BROWNSVILLE	76	-1	28.31	1.55
	MIAMI	79	1	70.07	2.66		MISSOULA	46	1	10.44	-3.67		CORPUS CHRISTI	73	-1	23.34	-8.41
	ORLANDO	75	2	60.86	9.41	NC	ASHEVILLE	57	-1	47.48	-2.13		DEL RIO	73	1	5.70	-13.91
	PENSACOLA	70	1	61.65	-6.67		CHARLOTTE	62	1	42.44	-1.16		EL PASO	66	0	9.57	0.76
	TALLAHASSEE	69	0	53.94	-4.88		GREENSBORO	59	0	46.46	2.54		FORT WORTH	68	2	39.11	2.09
	TAMPA	76	2	55.71	6.24		HATTERAS	65	0	42.39	-18.82		GALVESTON	74	1	35.54	-11.68
	WEST PALM BEACH	78	2	50.63	-11.13		RALEIGH	62	1	44.41	-1.65		HOUSTON	71	0	40.44	-11.41
GA	ATHENS	63	0	44.41	-4.53		WILMINGTON	66	1	40.05	-20.11		LUBBOCK	62	1	13.76	-4.57
	ATLANTA	64	1	46.33	-4.10	ND	BISMARCK	43	-1	27.54	8.48		MIDLAND	65	-1	8.87	-4.65
	AUGUSTA	65	-1	45.85	3.32		DICKINSON	42	-1	14.00	-1.61		SAN ANGELO	68	1	13.53	-7.40
	COLUMBUS	66	0	46.04	-2.78		FARGO	40	-3	20.49	-3.46		SAN ANTONIO	71	2	11.20	-21.18
	MACON	66	0	45.72	-1.18		GRAND FORKS	38	-2	22.29	0.54		VICTORIA	71	0	23.15	-17.26
	SAVANNAH	68	0	35.86	-12.26		JAMESTOWN	40	-1	15.26	-4.57		WACO	68	1	20.48	-15.91
HI	HILO	75	1	92.25	-28.15	NE	GRAND ISLAND	52	1	12.05	-14.57		WICHITA FALLS	65	1	19.13	-8.74
	HONOLULU	78	0	12.65	-3.75		LINCOLN	52	0	18.91	-10.43	UT	SALT LAKE CITY	56	1	12.00	-3.52
	KAHULUI	78	1	6.54	-9.67		NORFOLK	50	1	13.00	-14.01	VA	LYNCHBURG	58	2	46.01	3.27
	LIHUE	76	0	27.98	-8.24		NORTH PLATTE	51	1	13.79	-7.29		NORFOLK	61	-1	35.45	-13.73
IA	BURLINGTON	51	-1	25.25	-12.61		OMAHA	52	-1	21.61	-10.24		RICHMOND	60	1	38.89	-6.61
	CEDAR RAPIDS	47	-1	22.69	-13.22		SCOTTSBLUFF	50	0	8.98	-6.69		ROANOKE	58	0	46.50	3.68
	DES MOINES	50	-1	29.60	-6.95		VALENTINE	49	0	12.15	-8.75		WASH/DULLES	56	1	40.09	-3.15
	DUBUQUE	47	0	29.31	-8.88	NH	CONCORD	48	1	38.14	-3.81	VT	BURLINGTON	48	1	38.24	0.70
	SIOUX CITY	49	0	14.66	-14.61	NJ	ATLANTIC CITY	55	0	54.40	8.46	WA	OLYMPIA	51	0	50.81	0.20
	WATERLOO	48	-2	33.72	-2.57		NEWARK	57	1	38.33	-8.27		QUILLAYUTE	50	0	92.85	-8.46
ID	BOISE	53	-1	10.28	-1.22	NM	ALBUQUERQUE	58	0	8.77	-0.08		SEATTLE-TACOMA	53	-1	40.18	0.83
	LEWISTON	54	0	15.46	2.61	NV	ELY	46	0	8.07	-1.34		SPOKANE	49	0	17.08	0.62
	POCATELLO	46	-1	12.29	0.48		LAS VEGAS	71	0	1.80	-2.38		YAKIMA	50	-1	7.14	-0.88
IL	CHICAGO/O'HARE	51	0	30.43	-7.44		RENO	56	1	8.13	0.77	WI	EAU CLAIRE	44	-1	21.31	-11.68
	MOLINE	51	0	30.92	-7.34		WINNEMUCCA	52	1	5.91	-1.99		GREEN BAY	46	1	31.56	-0.08
	PEORIA	52	-1	26.38	-11.17	NY	ALBANY	50	1	44.83	1.44		LA CROSSE	47	-2	26.83	-8.39
	ROCKFORD	49	0	39.16	1.92		BINGHAMTON	47	0	43.28	1.24		MADISON	47	0	35.84	-1.30
	SPRINGFIELD	53	-1	33.62	-4.31		BUFFALO	50	1	44.64	3.96		MILWAUKEE	50	0	34.37	-0.20
IN	EVANSVILLE	57	0	44.57	-3.35		ROCHESTER	49	-1	40.29	5.20	WV	BECKLEY	53	0	47.63	4.09
	FORT WAYNE	51	0	32.52	-6.99		SYRACUSE	50	1	35.62	-4.27		CHARLESTON	56	-1	52.87	6.61
	INDIANAPOLIS	54	0	33.98	-9.65	OH	AKRON-CANTON	52	1	37.31	-4.27		ELKINS	51	-1	54.99	7.79
	SOUTH BEND	51	1	34.77	-4.45		CINCINNATI	55	0	44.90	-0.36		HUNTINGTON	56	0	43.87	-1.22
KS	CONCORDIA	56	1	20.79	-7.60		CLEVELAND	52	0	38.95	-2.08	WY	CASPER	45	-1	13.18	0.95
	DODGE CITY	56	0	11.27	-10.73		COLUMBUS	53	0	42.29	0.72		CHEYENNE	47	0	8.07	-7.35
	GOODLAND	56	4	10.10	-9.01		DAYTON	54	0	35.72	-5.61		LANDER	45	0	13.69	0.46
	TOPEKA	56	0	30.93	-5.59		MANSFIELD	51	0	42.09	-0.39		SHERIDAN	46	0	18.78	3.85







2022 U.S. Fieldwork Highlights

Highlights, released on January 12, 2023, were provided by USDA/NASS.

April: Cooler-than normal prevailed across most of the northern half of the U.S. Much of the Pacific Northwest, northern Plains, and northern Rockies recorded temperatures 4°F or more below normal. In contrast, temperatures were above normal across much of the southern half of the nation. Portions of the Gulf Coast and much of the southern Plains and Southwest recorded temperatures 2°F or more above normal. Meanwhile, much of the West remained dry, but at least twice the normal amount of precipitation was recorded in large sections of the northern Plains, as well as some locations in the Pacific Northwest, Rockies, and southern Texas. In the East, some locations in Florida, Georgia, New York, and South Carolina recorded at least twice the normal amount of monthly precipitation.

By April 10, producers had planted 2 percent of the nation's corn crop, 2 percentage points behind last year and 1 point behind the 5-year average. By April 24, producers had planted 7 percent of the nation's corn, 9 percentage points behind last year and 8 points behind the 5-year average. Nationwide, 12 percent of the cotton crop was planted by April 24, equal to the previous year but 1 percentage point ahead of the 5-year average.

May: Above-normal temperatures covered much of the country during May. Parts of Texas recorded temperatures 6°F or more above normal. In contrast, most of the Pacific Northwest, northern Plains, and Rockies recorded below-normal temperatures. Large parts of Idaho, Oregon, and Washington noted temperatures 4°F or more below normal. Meanwhile, most of the Southwest remained dry, but at least twice the normal amount of rainfall was recorded in portions of the mid-Atlantic, Midwest, Mississippi Valley, Pacific Northwest, northern Rockies, and Southeast.

By May 15, producers had planted 49 percent of the nation's corn crop, 29 percentage points behind last year and 18 points behind the 5-year average. Fourteen percent of the corn acreage had emerged by May 15, twenty-four percentage points behind the previous year and 18 points behind the 5-year average. Nationwide, 37 percent of the cotton crop was planted by May 15, one percentage point ahead of the previous year but equal to the 5-year average. Twenty-six percent of the nation's sorghum acreage was planted by May 15, equal to the previous year but 4 percentage points behind the 5-year average. Sixty-one percent of the nation's barley crop was planted by May 15, twenty percentage points behind last year and 12 points behind the 5-year average. Sixty-six percent of the nation's

soybean acreage was planted by May 29, seventeen percentage points behind last year and 1 point behind the 5-year average. By May 29, seventy-three percent of the spring wheat crop was seeded, 24 percentage points behind last year and 19 percentage points behind the 5-year average.

June: Above-average temperatures prevailed nearly nationwide during June. Much of Texas and parts of California, the Plains, Southeast, and Southwest recorded temperatures 3°F or more above normal for the month. In contrast, moderately below-normal temperatures were noted in much of the Northeast, Pacific Northwest, and northern Rockies. Parts of southern Florida, the Great Lakes, and mid-Atlantic were also slightly cooler than normal. Meanwhile, most of the Southwest remained drier than normal in June, while parts of the Appalachians, mid-Atlantic, Midwest, Mississippi Valley, Pacific Northwest, Plains, northern Rockies, and Southeast received at least twice the normal amount of precipitation.

By June 5, producers had planted 94 percent of the nation's corn crop, 4 percentage points behind last year but 2 points ahead of the 5-year average. Ninety-one percent of the barley crop was planted by June 5, seven percentage points behind last year and 6 points behind the 5-year average. Nationally, peanut producers had planted 94 percent of the 2022 peanut acreage by June 12, three percentage points ahead of the previous year and 1 point ahead of the 5-year average. By June 12, seventy-two percent of the nation's spring wheat crop had emerged, 23 percentage points behind the previous year and 21 points behind the 5-year average. By June 12, ninety-five percent of the nation's rice acreage had emerged, equal to last year but 1 percentage point ahead of the 5-year average. Eighty-eight percent of the nation's corn acreage had emerged by June 12, seven percentage points behind the previous year and 1 point behind the 5-year average. Eighty-seven percent of the nation's barley crop had emerged by June 12, eight percentage points behind the previous year and 5 points behind the 5-year average. Nationwide, 90 percent of the cotton crop was planted by June 12, three percentage points ahead of the previous year and 2 points ahead of the 5-year average. Eighty-eight percent of the nation's soybean acreage was planted by June 12, five percentage points behind last year but equal to the 5-year average. Ninety-one percent of the soybean acreage had emerged by June 26, four percentage points behind last year but equal to the 5-year average. Ninety percent of the sorghum acreage was planted by June 26, four percentage points behind both the previous year and the 5-year average.

July: Above-average temperatures covered much of the nation during June. In fact, parts of California, the Plains, Southeast, and Southwest recorded monthly temperatures 3°F or more above normal. In contrast, moderately below-normal temperatures were noted in much of the Northeast, Pacific Northwest, and northern Rockies. Parts of southern Florida, the Great Lakes, and mid-Atlantic were also slightly cooler than normal. Meanwhile, parts of the Southwest remained drier than normal, but many areas in the Appalachians, mid-Atlantic, Midwest, Mississippi Valley, Pacific Northwest, Plains, northern Rockies, and Southeast received at least twice the normal amount of precipitation.

By June 5, producers had planted 94 percent of the nation's corn crop, 4 percentage points behind last year but 2 points ahead of the 5-year average. Ninety-one percent of the nation's barley crop was planted by June 5, seven percentage points behind last year and 6 points behind the 5-year average. Nationally, peanut producers had planted 94 percent of the 2022 peanut acreage by June 12, three percentage points ahead of the previous year and 1 point ahead of the 5-year average. By June 12, seventy-two percent of the nation's spring wheat crop had emerged, 23 percentage points behind the previous year and 21 points behind the 5-year average. By June 12, ninety-five percent of the nation's rice acreage had emerged, equal to last year but 1 percentage point ahead of the 5-year average. Eighty-eight percent of the nation's corn acreage had emerged by June 12, seven percentage points behind the previous year and 1 point behind the 5-year average. Eighty-seven percent of the nation's barley crop had emerged by June 12, eight percentage points behind the previous year and 5 points behind the 5-year average. Nationwide, 90 percent of the cotton crop was planted by June 12, three percentage points ahead of the previous year and 2 points ahead of the 5-year average. Eighty-eight percent of the nation's soybean acreage was planted by June 12, five percentage points behind last year but equal to the 5-year average. Ninety-one percent of the nation's soybean acreage had emerged by June 26, four percentage points behind last year but equal to the 5-year average. Ninety percent of the nation's sorghum acreage was planted by June 26, four percentage points behind both the previous year and the 5-year average.

August: Above-average August temperatures prevailed for much of the nation. Large sections of California, the Northeast, Pacific Northwest, northern Plains, and northern Rockies recorded temperatures 4°F or more above normal. In contrast, large parts of the Mississippi Valley, Southeast, and Southwest were cooler than normal. Meanwhile, much of the Pacific Coast, Pacific Northwest, and central and

northern Plains were drier than normal, at least twice the average amount of precipitation was recorded in parts of California and the Great Basin, lower Mississippi Valley, Rockies, Southwest, and Texas.

By August 7, ninety percent of the nation's corn had reached the silking stage, 4 percentage points behind last year and 3 points behind the 5-year average. By August 7, forty-five percent of the corn acreage was at or beyond the dough stage, 8 percentage points behind last year and 4 points behind the 5-year average. By August 14, ninety-three percent of the nation's soybean acreage had reached the blooming stage, 1 percentage point behind last year but equal to the 5-year average. By August 14, eighty-four percent of the nation's rice acreage had reached the headed stage, equal to the previous year but 2 percentage points behind the 5-year average. By August 28, barley producers had harvested 62 percent of the nation's barley crop, 21 percentage points behind last year and 14 points behind the 5-year average. On August 28, fifty-six percent of the nation's barley acreage was rated in good to excellent condition, 33 percentage points above the same time in 2021. By August 28, fifty percent of the nation's spring wheat had been harvested, 36 percentage points behind the previous year and 21 points behind the 5-year average. On August 28, sixty-eight percent of the nation's spring wheat was rated in good to excellent condition, 57 percentage points above the same time in 2021. By August 28, eighty-eight percent of the sorghum acreage had reached the headed stage, 6 percentage points behind last year and 5 points behind the 5-year average. Eighty percent of the nation's oat acreage had been harvested by August 28, eleven percentage points behind last year and 7 points behind the 5-year average. By August 28, ninety-one percent of the nation's soybean acreage had begun setting pods, 1 percentage point behind both last year and the 5-year average. By August 28, ninety-four percent of the nation's cotton acreage had begun setting bolls, 9 percentage points ahead of last year and 3 points ahead of the 5-year average.

September: Warmer-than-normal weather prevailed in much of the western and central U.S. Large parts of California, the Great Basin, Great Plains, Pacific Northwest, and Rockies recorded temperatures 4°F or more above normal. In contrast, portions of the Mississippi Valley, New England, Ohio Valley, and Southeast were moderately cooler than normal, along with parts of Texas. Meanwhile, most of the central parts of the country were drier than normal, but above-normal precipitation was recorded in much of California, Florida, the Northeast, Rockies, and Southwest. Due to Hurricane Ian, most of central and southern Florida received at least 12 inches of September rainfall.

By September 4, sixty-three percent of this year's corn acreage was denting, 9 percentage points behind last year and 4 points behind the 5-year average. Ninety percent of the nation's oat acreage had been harvested by September 4, six percentage points behind last year and 3 points behind average. Forty percent of the nation's corn acreage was mature by September 18, fourteen percentage points behind last year and 5 points behind average. By September 18, barley producers had harvested 94 percent of the nation's crop, 5 percentage points behind last year and 2 points behind average. By September 18, ninety-four percent of the nation's spring wheat had been harvested, 6 percentage points behind the previous year but equal to the average. Nationally, 45 percent of the rice acreage was harvested by September 18, four percentage points behind the previous year and 6 points behind average. On September 18, seventy-two percent of the nation's rice acreage was rated in good to excellent condition, 4 percentage points below the same time in 2021. Nationally, soybeans leaves dropping advanced to 42 percent complete by September 18, thirteen percentage points behind last year and 5 points behind average. Eighty-five percent of the nation's sorghum acreage was at or beyond the coloring stage by September 18, six percentage points behind last year and 3 points behind average. Nationwide, producers had sown 31 percent of the intended 2023 winter wheat acreage by September 25, one percentage point behind last year but 1 point ahead of average. By September 25, sixty-seven percent of the nation's cotton had open bolls, 9 percentage points ahead of last year and 5 points ahead of average.

October: Apart from the Southwest, October was warmer than normal for most of the West. Some areas in California, Montana, and Washington recorded monthly temperatures averaging at least 8°F or more above normal. Except for New England, most of the eastern half of the U.S. was cooler than normal. Parts of the Mississippi Valley, Ohio Valley, and Southeast recorded temperatures 4°F or more below normal. Meanwhile, much of the nation remained drier than normal in October, although many Southwestern locations and parts of coastal New Jersey and the Rockies recorded at least twice the normal amount of precipitation.

Soybean harvest across the nation was 63 percent complete by October 16, five percentage points ahead of last year and 11 points ahead of the 5-year average. Fifty-five percent of the nation's peanut acreage was harvested by October 16, eighteen percentage points ahead of last year and 8 points ahead of average. On October 16, sixty-two percent of the nation's peanut acreage was rated in good to excellent condition, 9 percentage points below the same time in 2021. Nationally, 89 percent of the rice acreage was harvested by October 16, one percentage point behind both the previous year and the average. Forty-five percent of the 2022 corn acreage had been harvested by October 16, five percentage points behind last year but 5 points ahead of average. By October 16, fifty-three percent of the nation's corn acreage

was rated in good to excellent condition, 7 percentage points below the same time in 2021. Fifty-seven percent of the 2022 sorghum acreage had been harvested by October 16, one percentage point behind last year but 8 points ahead of average. Nationwide, producers had sown 69 percent of the intended 2023 winter wheat acreage by October 16, equal to the previous year but 1 percentage point ahead of average. By October 23, forty-five percent of the nation's cotton acreage was harvested, 11 percentage points ahead of last year and 6 points ahead of average. On October 23, thirty percent of the 2022 cotton acreage was rated in good to excellent condition, 34 percentage points below the same time in 2021. By October 30, sugarbeet producers had harvested 89 percent of the nation's crop, 5 percentage points ahead of the previous year and 7 points ahead of average.

November: Most of the western half of the nation recorded below-normal November temperatures. Large parts of the Great Basin, Pacific Northwest, northern Plains, and northern Rockies recorded monthly temperatures 6°F or more below normal. In contrast, most of the eastern half of the U.S. was warmer than normal. Large parts of the mid-Atlantic, Northeast, and Southeast, as well as parts of the Great Lakes region, recorded temperatures 3°F or more above normal. Meanwhile, much of the nation recorded above-normal November precipitation. At least twice the normal amount of precipitation was recorded in parts of Florida, the Great Lakes, Midwest, lower Mississippi Valley, Great Plains, Rockies, and Southwest.

Nationwide, producers had sown 96 percent of the intended 2023 winter wheat acreage by November 13, two percentage points ahead of last year and 3 points ahead of the 5-year average. Eighty-one percent of the winter wheat acreage had emerged by November 13, one percentage point ahead of last year but equal to the average. Soybean harvest across the nation was 96 percent complete by November 13, five percentage points ahead of both last year and the 5-year average. Ninety-one percent of the nation's peanut acreage was harvested by November 13, six percentage points ahead of last year and 4 points ahead of average. Ninety-three percent of the 2022 corn acreage was harvested by November 13, three percentage points ahead of last year and 8 points ahead of average. By November 13, sugarbeet producers had harvested 98 percent of the nation's crop, 1 percentage point behind last year but equal to the average. Ninety-seven percent of the 2022 sorghum acreage had been harvested by November 20, four percentage points ahead of last year and 6 points ahead of average. By November 20, ninety-five percent of this year's sunflower crop was harvested, 6 percentage points ahead of last year and 17 points ahead of average. By November 27, thirty-four percent of the 2023 winter wheat acreage was reported in good to excellent condition, 10 percentage points below the same time in 2021. By November 27, eighty-four percent of the nation's cotton acreage was harvested, equal to last year but 5 percentage points ahead of average.

2022 U.S. Crop Production Highlights

Highlights, released on January 12, 2023, were provided by USDA/NASS.

Corn: Corn for grain production in the United States was estimated at 13.7 billion bushels, down 9 percent from the 2021 estimate. The average U.S. yield was estimated at 173.3 bushels per acre, 3.4 bushels below the 2021 record-high yield of 176.7 bushels per acre.

Estimated yields in 2022 were down from the previous year across the southern Plains, Southeast, and West Coast States. Record-high yields were estimated in Idaho, Illinois, Minnesota, Virginia, West Virginia, and Wisconsin.

Corn planted area, at 88.6 million acres, was down 5 percent from the 2021 estimate. Area harvested for grain was estimated at 79.2 million acres, down 7 percent from the 2021 estimate. Record-low harvested for grain acres were estimated for California.

The 2022 corn objective yield data indicated the sixth-highest number of ears per acre, since 2012, for the combined ten objective yield states (Iowa, Illinois, Indiana, Kansas, Minnesota, Missouri, Nebraska, Ohio, South Dakota, and Wisconsin).

Corn silage production was estimated at 129 million tons for 2022, down 1 percent from the 2021 estimate. Record-low silage production was estimated in Massachusetts. The U.S. silage yield was estimated at 18.7 tons per acre, down 1.4 tons from 2021. Record-high silage yields were estimated in Georgia, Illinois, Ohio, Virginia, West Virginia, Wisconsin, and Wyoming. Area harvested for silage was estimated at 6.86 million acres, up 6 percent from the 2021 estimate. Record-low acres harvested for silage were estimated in Alabama, Massachusetts, and Rhode Island.

Sorghum: Grain production in 2022 was estimated at 188 million bushels, down 58 percent from the 2021 total. Planted area for 2022 was estimated at 6.33 million acres, down 13 percent from 2021. Area harvested for grain, at 4.57 million acres, was down 30 percent from 2021. Grain yield was estimated at 41.1 bushels per acre, down 27.9 bushels from 2021. Record-low planted and harvested acres for grain were estimated in Texas.

Silage production was estimated at 5.66 million tons, up 11 percent from 2021. Area harvested for silage was estimated at 525,000 acres, up 59 percent from the previous year. Silage yield averaged 10.8 tons per acre, down 4.6 tons per acre from 2021. Record-high silage production was estimated in Colorado and Texas.

Oats: Production in 2022 was estimated at 57.7 million bushels, up 45 percent from 2021. Yield was estimated at 64.8 bushels per acre, up 3.5 bushels from the previous year.

Harvested area, at 890 thousand acres, was 37 percent above 2021.

Record-low acres were planted in Wisconsin. Record-low acres were harvested in Georgia, Illinois, and Ohio. Record-high yields were estimated in Maine, Texas, and Wisconsin.

Barley: Production was estimated at 174 million bushels, up 45 percent from the 2021 total of 120 million bushels. The average yield, at 71.7 bushels per acre, was up 11.4 bushels from the previous year. Producers seeded 2.95 million acres in 2022, up 9 percent from 2021. Harvested area, at 2.43 million acres, was up 22 percent from 2021.

California, Michigan, New York, Oregon, Washington, and Wisconsin had record-low planted acreage. Record-low harvested acres were estimated in South Dakota and Wisconsin. Record-high yields were estimated in Arizona and Idaho. Record-low production was estimated in Wisconsin.

All wheat: Production totaled 1.65 billion bushels in 2022, up less than 1 percent from the 2021 total of 1.65 billion bushels. Area harvested for grain totaled 35.5 million acres, down 4 percent from 2021. The U.S. yield was estimated at 46.5 bushels per acre, up 2.2 bushels from the previous year. The levels of production and changes from 2021 by type were: winter wheat, 1.1 billion bushels, down 14 percent; other spring wheat, 482 million bushels, up 46 percent; and Durum wheat, 64.0 million bushels, up 70 percent.

Winter wheat: Production for 2022 totaled 1.10 billion bushels, down 14 percent from the 2021 total of 1.28 billion bushels. The U.S. yield, at 47.0 bushels per acre, was down 3.2 bushels from 2021. Area harvested for grain was estimated at 23.5 million acres, down 8 percent from 2021.

Utah had record-low planted acreage. California and Utah had record-low harvested acreage. Record-high yields were noted in Illinois, New Jersey, North Dakota, and Tennessee.

Compared with 2021, harvested acreage was down 11 percent in the major Hard Red Winter (HRW) growing states, the primary winter wheat-producing area. HRW production totaled 531 million bushels, down 29 percent from 2021.

In the Soft Red Winter (SRW) growing area, planted and harvested acreage decreased from 2021. SRW production totaled 337 million bushels, down 7 percent from 2021.

White winter wheat production totaled 236 million bushels, up 41 percent from 2021. Harvested acreage was up 3 percent from 2021.

Other spring wheat: Production for 2022 was estimated at 482 million bushels, up 46 percent from the 2021 total of 331 million bushels. Harvested area totaled 10.4 million acres, up 3 percent from 2021. The U.S. yield was estimated at 46.2 bushels per acre, up 13.6 bushel from 32.6 bushels per acre in 2021. A record-high yield was estimated in North Dakota. Of the total production, 446 million bushels were Hard Red Spring wheat, up 50 percent from the 2021 total.

Durum wheat: Production for 2022 was estimated at 64.0 million bushels, up 70 percent from the 2021 total of 37.6 million bushels. Area harvested for grain totaled 1.58 million acres, up 4 percent from 2021. The U.S. yield was estimated at 40.5 bushels per acre, up 15.8 bushels from the 2021 yield. Production in North Dakota, the largest Durum wheat-producing state, was up 59 percent from 2021. The increase in production follows dry last year's dry conditions in the major Durum wheat-growing states.

Rice: Production in 2022 totaled 160 million cwt, down 16 percent from the 2021 total. Planted area for 2021 was estimated at 2.22 million acres, down 12 percent from 2021. Area harvested, at 2.17 million acres, was down 13 percent from the previous crop year. The average yield for all U.S. rice was estimated at 7,383 pounds per acre, down 326 pounds from the 2021 average yield of 7,709 pounds per acre.

All hay: Production of all dry hay for 2022 was estimated at 112.8 million tons, down 6 percent from the 2021 total. Area harvested was estimated at 49.5 million acres, down 2 percent from 2021. The average yield, at 2.28 tons per acre, was down 0.09 ton from 2021.

Record-low harvested acres were estimated in Colorado, Delaware, Nebraska, Ohio, Oregon, and Wisconsin.

Alfalfa and alfalfa mixtures: Production in 2022 was estimated at 48.0 million tons, down 3 percent from the 2021 total. Harvested area, at 14.9 million acres, was 2 percent below 2021. Average yield was estimated at 3.22 tons per acre, down 0.01 ton from 2021.

Record-low harvested acres were estimated in Arkansas, California, Delaware, Rhode Island, and Tennessee, while record-high harvested acres were estimated in Nevada. Record-high yields were estimated in Pennsylvania and Vermont.

All other hay: Production in 2022 totaled 64.8 million tons, down 9 percent from the 2021 total. Harvested area, at 34.6 million acres, was down 2 percent from 2021. Average yield

was estimated at 1.87 tons per acre, down 0.13 ton from 2021.

Record-low harvested acres were estimated in Indiana, Nebraska, Oregon, and Wisconsin, while record-high harvested acres were estimated in Utah. Record-high yield was estimated in Utah. Record-low production was estimated in Maryland and Wisconsin, while record-high production was estimated in Arizona and Utah.

Forage: In 2022, seventeen states were included in the forage estimation program, which measures annual production of forage crops. Haylage and greenchop production was converted to 13 percent moisture and combined with dry hay production to derive the total forage production. The total 2022 all haylage and greenchop production was 28.2 million tons, of which 17.4 million tons were from alfalfa and alfalfa mixtures. The 17-state total for all forage production was 75.0 million tons. Of this total, 38.5 million tons were produced from alfalfa and alfalfa mixtures.

Peanuts: Production was estimated at 5.57 billion pounds, down 12 percent from 2021. Planted area was estimated at 1.45 million acres, down 8 percent from 2021. Harvested area was estimated at 1.39 million acres, down 10 percent from 2021. The average yield was estimated at 4,019 pounds per acre, down 111 pounds from 2021.

Record-high yields were estimated in Mississippi, North Carolina, and South Carolina.

Canola: Production in 2022 was estimated at a record-high 3.82 billion pounds, up 40 percent from 2021. The average yield, at 1,762 pounds per acre, is up 460 pounds from last year's average and is the sixth-highest yield on record. Planted area was estimated at 2.21 million acres, 3 percent above the previous year's acreage. Harvested area, at 2.17 million acres, was up 4 percent from 2021. Both the planted and harvested area are the highest on record for the nation.

Production in North Dakota, the leading canola-producing state, was estimated at a record-high 3.25 billion pounds, an increase of 41 percent from 2021. Planted and harvested area in North Dakota were up 3 and 4 percent, respectively, from 2021—and both were record highs.

Planted area in Washington for 2022 was a record high. Harvested area in Montana and Washington were both record highs. A record-high yield was estimated in Minnesota, while a record-low yield was estimated in Kansas. Record-high production was estimated in Washington, while record-low production was estimated in Kansas and Oklahoma.

Sunflower: The 2022 sunflower production totaled 2.81 billion pounds, up 48 percent from 2021. The U.S. average yield of 1,750 pounds per acre increased 221 pounds from 2021. Planted area, at 1.69 million acres, was 31 percent above the previous year. Area harvested increased 29 percent from 2021 to 1.61 million acres.

North Dakota, the leading sunflower-producing state during 2022, produced 1.34 billion pounds, an increase of 76 percent from 2021. Compared with last year, planted area in North Dakota increased 45 percent and yield increased 340 pounds to 1,921 pounds per acre. Meanwhile, production in South Dakota increased 32 percent from 2021 to 1.08 billion pounds. Planted acreage in South Dakota, at 652,000 acres, increased 25 percent from the previous year. The average yield in South Dakota increased 114 pounds from 2021 to 1,746 pounds per acre.

U.S. production of oil-type sunflower varieties, at 2.57 billion pounds, increased 48 percent from 2021. Compared with the previous year, harvested acres were up 30 percent and the average yield increased by 216 pounds to 1,739 pounds per acre. This represents the second highest U.S. yield on record. The average yield for oil-type sunflower varieties in Minnesota and North Dakota were both record highs, while the average yield in California and Colorado were both record lows.

Production of non-oil sunflower varieties was estimated at 241 million pounds, an increase of 44 percent from 2021. Area harvested, at 128,000 acres, was up 23 percent from 2021. The average yield increased by 278 pounds from 2021 to a record-high 1,880 pounds per acre. The 2022 average yield for non-oil sunflower varieties in California, North Dakota, and Texas were record highs.

Soybeans: Production in 2022 totaled 4.28 billion bushels, down 4 percent from 2021. The average yield was estimated at 49.5 bushels per acre, 2.2 bushels below 2021. Planted area for the nation, at 87.5 million acres, was up less than 1 percent from the 2021 planted acreage. Soybean growers harvested 86.3 million acres, up slightly from 2021.

Record-high planted acreage was estimated in Illinois, Kentucky, Missouri, Nebraska, New York, and Ohio. Illinois, Kentucky, Missouri, and Nebraska had record-high harvested acreage. Record-high yields occurred in Arkansas and Mississippi. Record-high production was harvested in Mississippi, Ohio, and Wisconsin.

The 2022 soybean objective yield survey data indicated that final average pod counts were lower than 2021 in the combined eleven objective yield states. Compared with final counts for 2021, pod counts were down in eight of the 11 published states. A decrease of more than 100 pods per 18 square feet from 2021's final pod count occurred in Illinois,

Iowa, Kansas, Missouri, Ohio, and South Dakota, while a decrease of more than 500 pods per 18 square feet occurred in Nebraska.

Cotton: Upland cotton production was estimated at 14.2 million 480-pound bales, down 17 percent from the previous year. The U.S. yield for Upland cotton is estimated at 939 pounds per acre, up 126 pounds from 2021. Upland planted area, estimated at 13.6 million acres, was up 22 percent from the previous year. Harvested area, at 7.26 million acres, was down 28 percent from the previous year. Upland cotton planted and harvested acreage in California were at record lows. In Texas, record-low Upland harvested acres were reported. If realized, the forecast yield for Upland and all cotton in New Mexico and North Carolina, as well as the United States, will be a record high. The forecasted Pima yield for New Mexico is also a record high.

In the Southeast States (Alabama, Florida, Georgia, North Carolina, South Carolina, and Virginia), planting was completed by mid-June. The crop was rated in mostly good to excellent condition throughout the growing season.

In the Delta region, planting was complete by mid-June. The months of June and July were very hot and dry, resulting in drought conditions for parts of the region.

In Texas, extremely dry conditions were the main story of the 2022 growing season. The crop was rated in mostly poor to fair condition throughout the season.

American Pima producers planted 183,000 acres in 2022, up 45 percent from 2021. Harvested area, at 178,200 acres, was up 44 percent from the previous year. Production was estimated at 474 thousand 480-pound bales, up 43 percent from 2021. The U.S. yield was estimated at 1,277 pounds per acre, down 10 pounds from the previous year.

Ginnings totaled 12,981,400 running bales prior to January 1.

Sugarbeets: Production for 2022 was estimated at 32.6 million tons, down 11 percent from the previous year's revised production. Growers in the 11 major sugarbeet-producing states planted 1.16 million acres, down slightly from the 2021 revised area. Harvested area, at 1.14 million acres, was up 3 percent from the previous year. Estimated yield, at 28.6 tons per acre, was down 4.6 tons from last year.

Sugarcane: Production of sugarcane for sugar and seed in 2022 was estimated at 34.7 million tons, of which 33.1 million tons were utilized for sugar and 1.59 million tons for seed. Total production for sugar and seed was up 6 percent from 2021. Sugarcane producers harvested 928,600 acres for sugar and seed in 2022, down 1 percent from the previous year. Yield for sugar and seed was estimated at 37.3 tons per acre, up 2.2 tons from 2021.

International Weather and Crop Summary

January 15-21, 2023

International Weather and Crop Highlights and Summaries provided by USDA/WAOB

HIGHLIGHTS

EUROPE: Continued stormy albeit cooler weather prevailed across much of Europe.

MIDDLE EAST: Winter drought over central Turkey contrasted with additional heavy rain and mountain snow in southern Iran and environs.

NORTHWESTERN AFRICA: Cool, showery conditions eased drought and improved topsoil moisture for winter grains, though the drought is far from over.

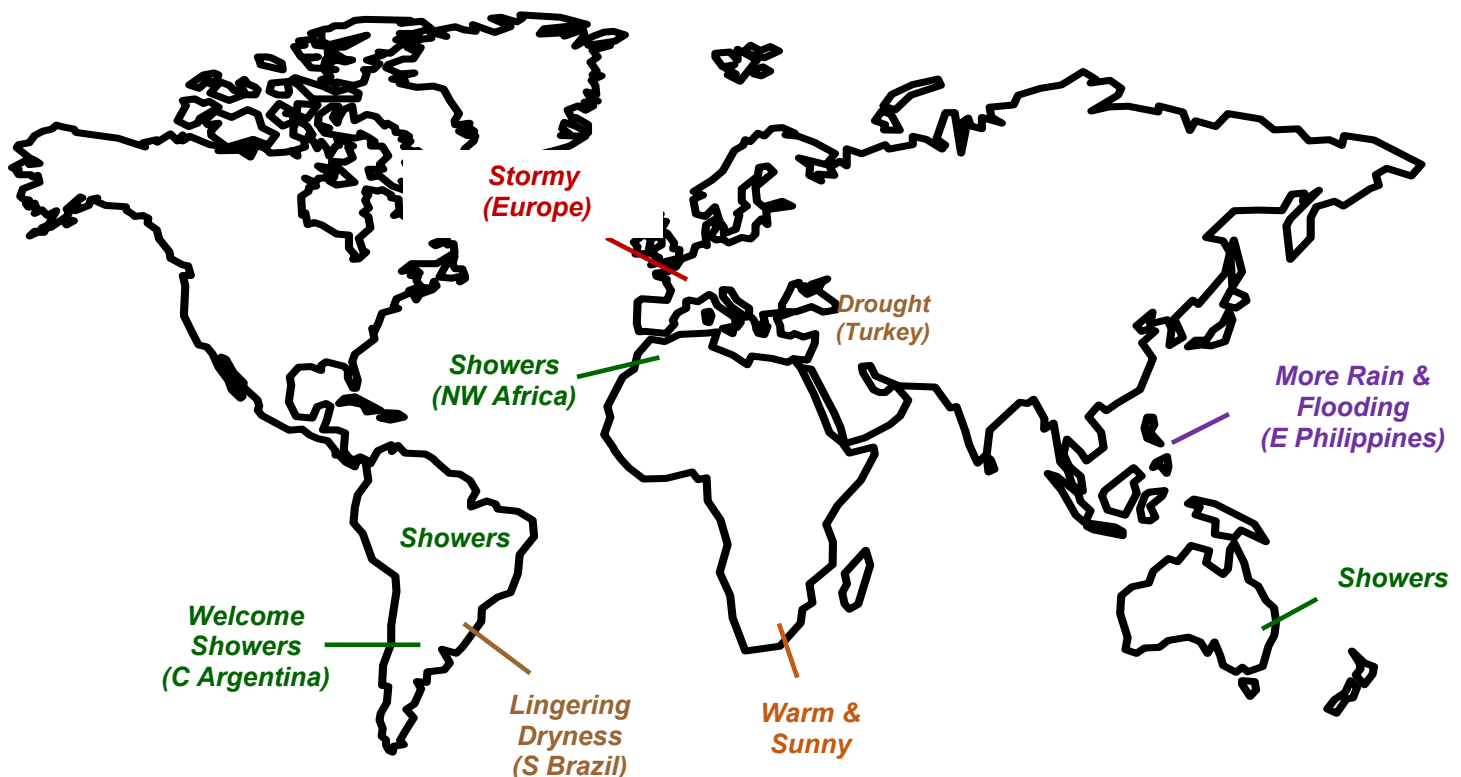
SOUTHEAST ASIA: More deluges sustained localized flooding in minor rice producing areas of the eastern Philippines, while seasonably drier weather prevailed in Indochina.

AUSTRALIA: Mostly dry weather in the south and west favored winter crop harvesting, while scattered showers in the east benefited summer crops.

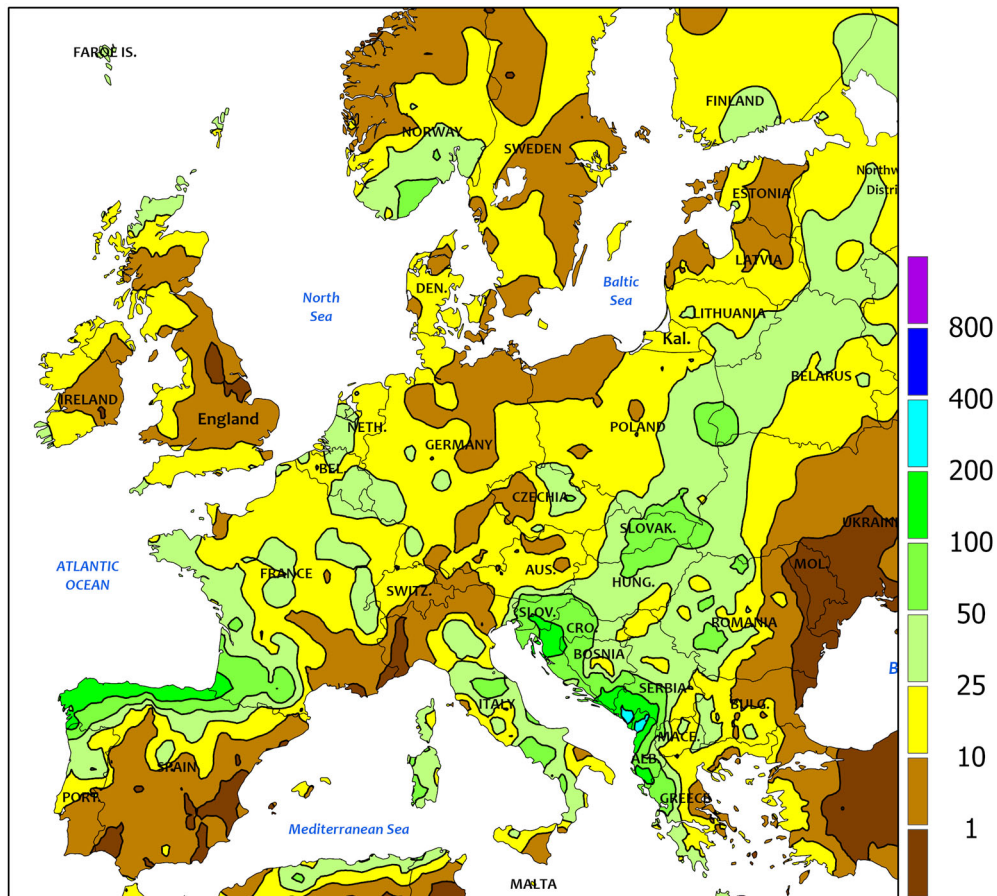
SOUTH AFRICA: Conditions remained overall favorable for vegetative to reproductive corn.

ARGENTINA: Locally heavy showers brought much-needed relief from stressful heat and dryness.

BRAZIL: Moisture remained limited for corn and soybeans in Rio Grande do Sul.



EUROPE
Total Precipitation(mm)
January 15 - 21, 2023



CLIMATE PREDICTION CENTER, NOAA
Computer generated contours
Based on preliminary data

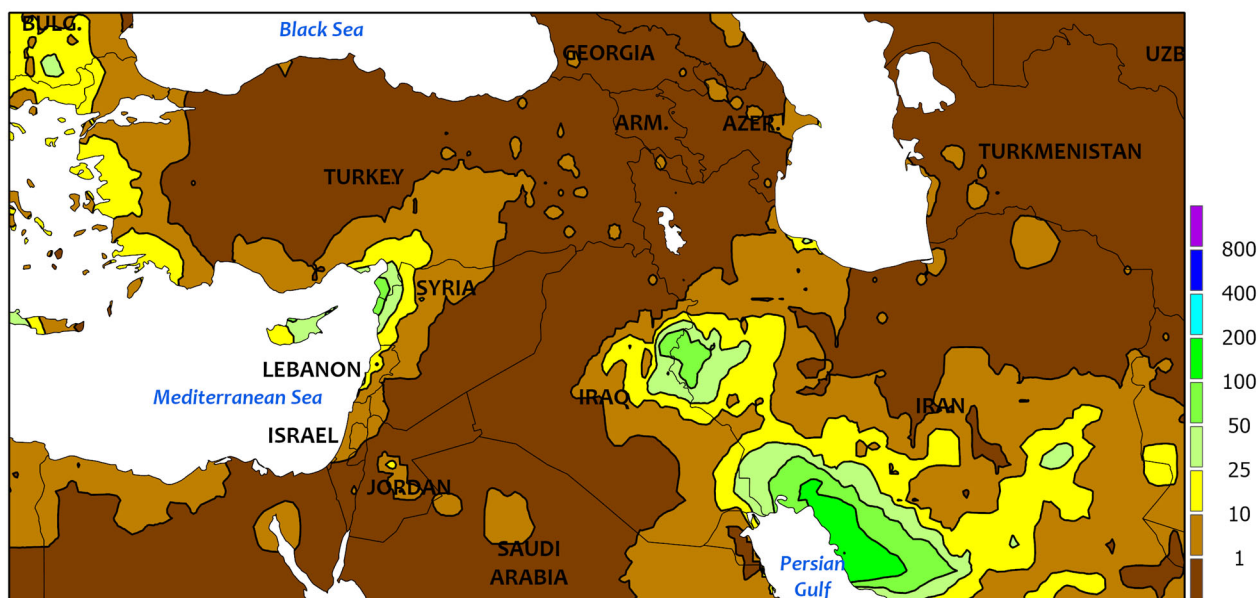


EUROPE

Stormy albeit colder weather prevailed over the continent. A series of storms tracked southeastward from the northern Atlantic Ocean across central and southern Europe before recurving northward over the Balkans, resulting in widespread moderate to heavy rain and mountain snow (10-100 mm liquid equivalent). Furthermore, one of the storms acquired subtropical characteristics as it drifted northwestward over the Adriatic Sea, leading to excessive downpours (100-300 mm) and local flooding in southern Italy, western Greece, and the western Balkans. Despite the unsettled weather pattern, drier conditions (less than 10 mm) were noted from southern Spain into northwestern Italy and across the lower Danube River

Valley. Temperatures for the week averaged 2 to 4°C below normal from England into southern France and near normal in Spain and Germany, a reversal from the recent protracted warmth that has prevailed over western and central Europe since the end of December. Conversely, temperatures up to 11°C above normal lingered in the southeastern Balkans, while lesser anomalies (2-6°C above normal) were noted across the continent's northeastern quadrant. Overall, conditions in Europe remained favorable for dormant (north and central) to semi-dormant (south) winter grains and oilseeds, although most growing areas remained devoid of snow cover and exposed to potential incursions of bitter cold.

MIDDLE EAST
Total Precipitation(mm)
January 15 - 21, 2023



CLIMATE PREDICTION CENTER, NOAA
Computer generated contours
Based on preliminary data



MIDDLE EAST

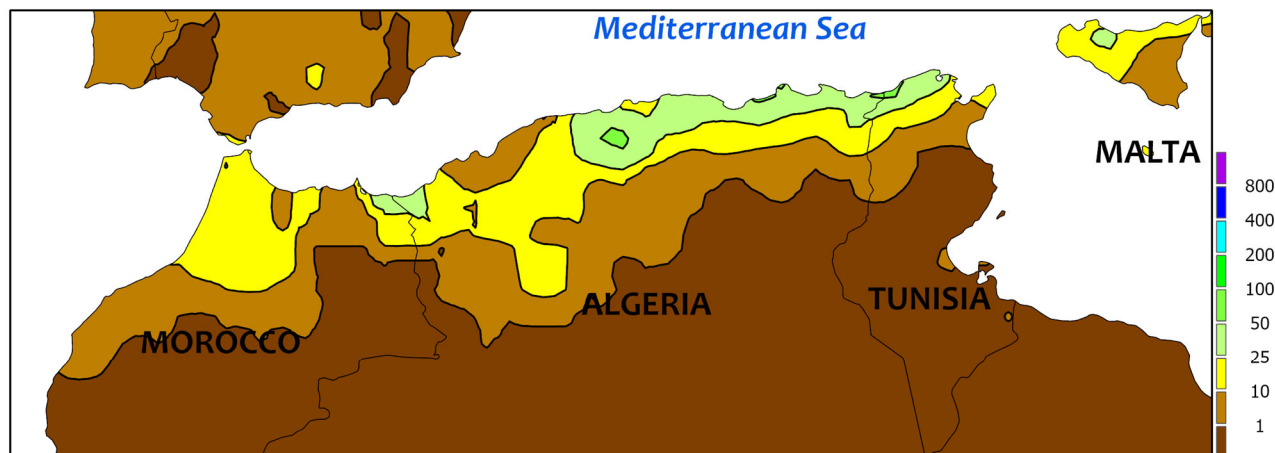
Intensifying winter drought over central Turkey contrasted with additional heavy precipitation near the Persian Gulf. Central Turkey's Anatolian Plateau — a primary winter grain area — remained dry and very warm (up to 6°C above normal); season-to-date precipitation (since September 1) slipped to less than 55 percent of normal as of January 21, the third driest of the past 30 years. Similarly, the Adana and GAP Regions of southeastern Turkey also slipped further into drought, with precipitation since September 1 totaling 50 and 65 percent of normal, respectively. Northeastern Iran (Khorasan) has likewise trended dry over the past 60 days, with light showers this past week (3 mm or less) offering little to no moisture improvements for dormant winter crops. Meanwhile, a slow-moving storm

system triggered light to moderate showers (5-15 mm) in western Turkey, providing much-needed soil moisture for northwestern winter wheat but doing little to break this region's drought. The same storm triggered a small area of heavy showers (locally more than 50 mm) in coastal Syria and immediate environs, but rain did not reach the primary inland crop areas. Another unusually robust storm system generated additional moderate to heavy rain across southern and southwestern Iran (15-170 mm), eastern Iraq (5-25 mm), and northeastern Saudi Arabia (2-20 mm). Winter crop prospects in these locales are vastly improved over last year's drought. Temperatures averaged 1 to 4°C above normal from the Mediterranean Coast into northern Iraq but up to 6°C below normal in Iran.

NORTHWESTERN AFRICA

Total Precipitation(mm)

January 15 - 21, 2023



CLIMATE PREDICTION CENTER, NOAA
Computer generated contours
Based on preliminary data

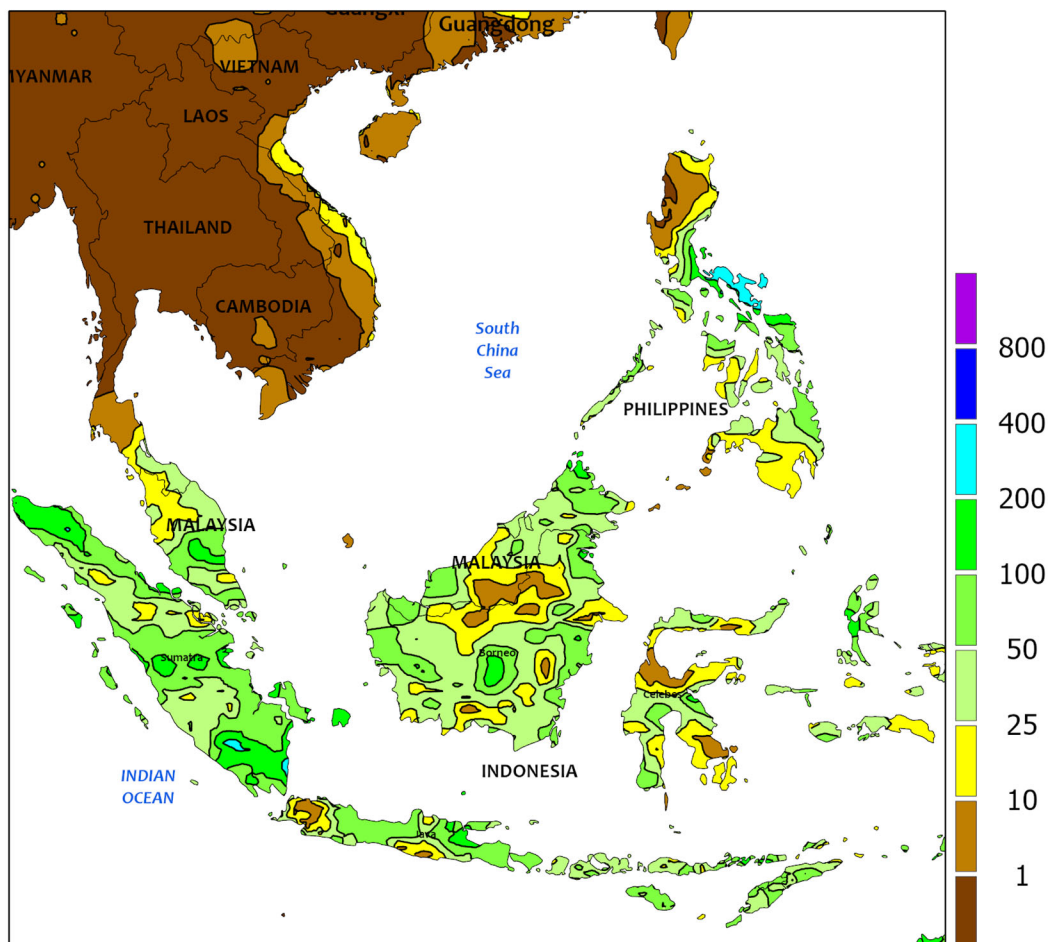


NORTHWESTERN AFRICA

Cooler, showery weather provided the region's drought-afflicted winter grains a sorely needed reprieve, though the drought is far from over. A series of storms sweeping across the Mediterranean Sea triggered moderate to heavy showers (10-95 mm) from northeastern Morocco into northern Tunisia, moistening topsoils for vegetative winter wheat and barley but still falling well short of eradicating the region's drought. As of January 21, season-to-date (since September 1) rainfall remained less than 50 percent of normal in western and central Algeria's Tell Region, and less than 50 percent of normal in the northeastern Tell Region of Algeria. There was a very

tight rainfall gradient in northern Tunisia, with amounts above 90 mm near the coast rapidly transitioning to less than 5 mm farther inland. Meanwhile, Morocco's primary croplands adjacent to the central Atlantic Coast largely missed out, though northern-most reaches of the Moroccan grain belt fared better (more than 10 mm). The recent spell of protracted warmth abated across northern Africa, with temperatures for the week averaging near normal across much of Morocco and from central Algeria into northern Tunisia, while locally warm conditions lingered in western Algeria (up to 3°C above normal) and central Tunisia (1-2°C above normal).

SOUTHEAST ASIA
Total Precipitation(mm)
January 15 - 21, 2023



CLIMATE PREDICTION CENTER, NOAA
Computer generated contours
Based on preliminary data

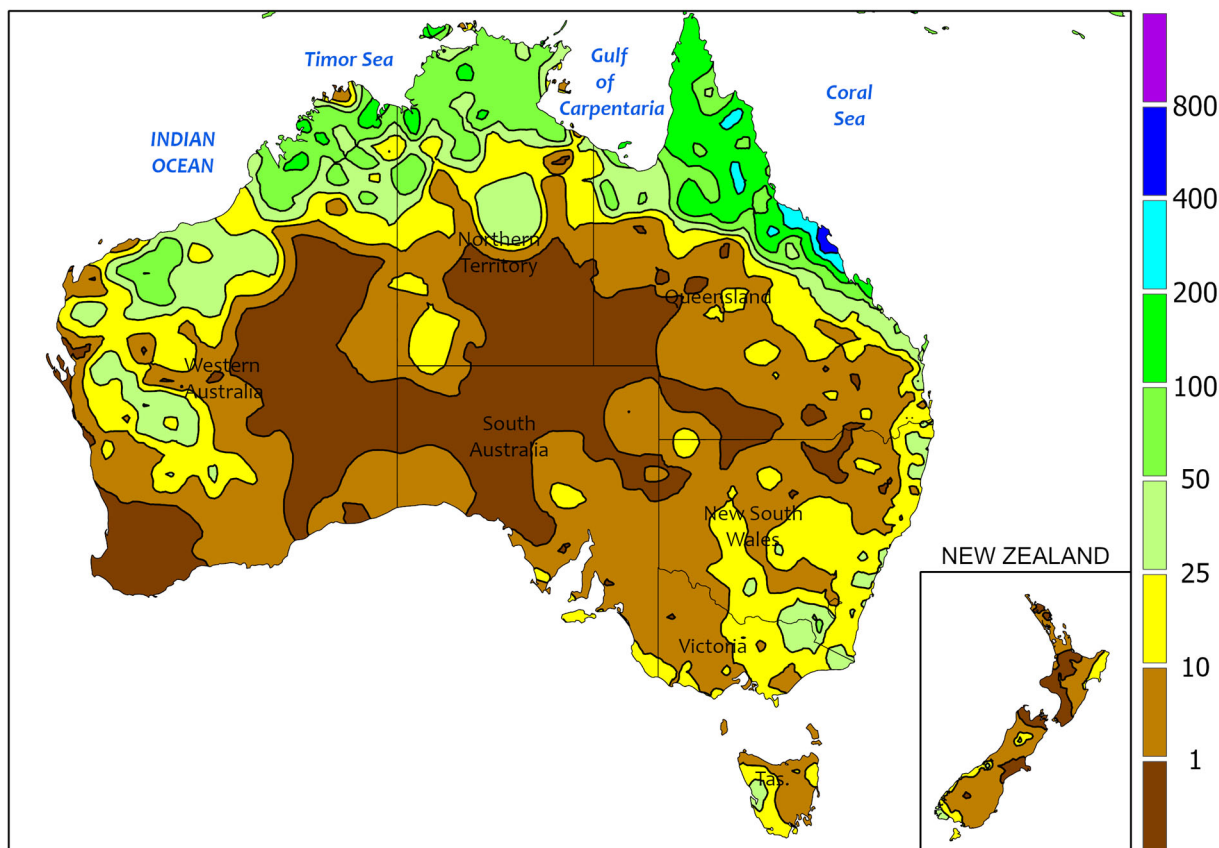


SOUTHEAST ASIA

More isolated downpours were reported in the eastern Philippines, adding to already impressive totals. The most recent deluges were centered over southern Luzon where amounts surpassed 300 mm and pushed totals since December 1 to over 1,400 mm (160 percent of normal). While flooding persisted across eastern areas, it avoided major crop producing zones to the north (Cagayan Valley) and south (Mindanao). Elsewhere,

seasonable showers (25-100 mm) throughout Malaysia and Indonesia maintained favorable long-term (90-day) moisture supplies for oil palm and rice; rainfall in this section has oscillated between excessive to much lighter than normal over the last 45 days. Meanwhile, seasonably drier weather prevailed in Indochina, easing excessive wetness in central Vietnam and overall aiding irrigated rice development in the surrounding locales.

AUSTRALIA
Total Precipitation(mm)
January 15 - 21, 2023



Gridded data from the Australian Bureau of Meteorology: www.bom.gov.au/
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CLIMATE PREDICTION CENTER, NOAA
Computer generated contours
Based on preliminary data

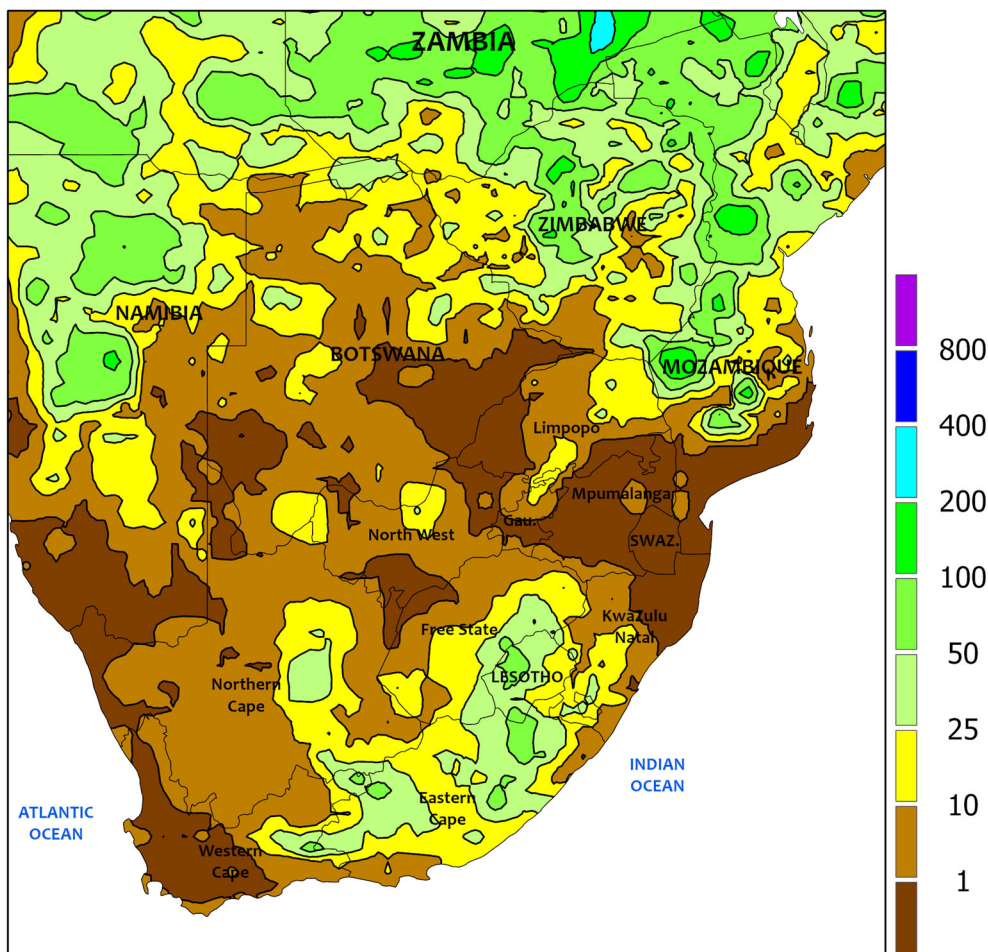


AUSTRALIA

In Western Australia, dry weather favored winter wheat harvesting, which is reportedly nearly complete. Similarly, mostly dry weather (generally less than 5 mm) in South Australia and western Victoria allowed final winter crop harvesting to proceed with minimal interruptions. In eastern Victoria and southern New South Wales, passing showers (5-25 mm, locally more) likely caused some fieldwork delays, but

winter grain and oilseed harvesting progressed nonetheless. Elsewhere in the wheat belt, scattered showers (5-15 mm) in northern New South Wales and southern Queensland maintained adequate soil moisture for cotton, sorghum, and other summer crop development. Temperatures averaged 1 to 2°C below normal in major summer crop producing areas, with maximum temperatures generally in the 30s (degrees C).

SOUTH AFRICA
Total Precipitation(mm)
January 15 - 21, 2023



CLIMATE PREDICTION CENTER, NOAA
Computer generated contours
Based on preliminary data

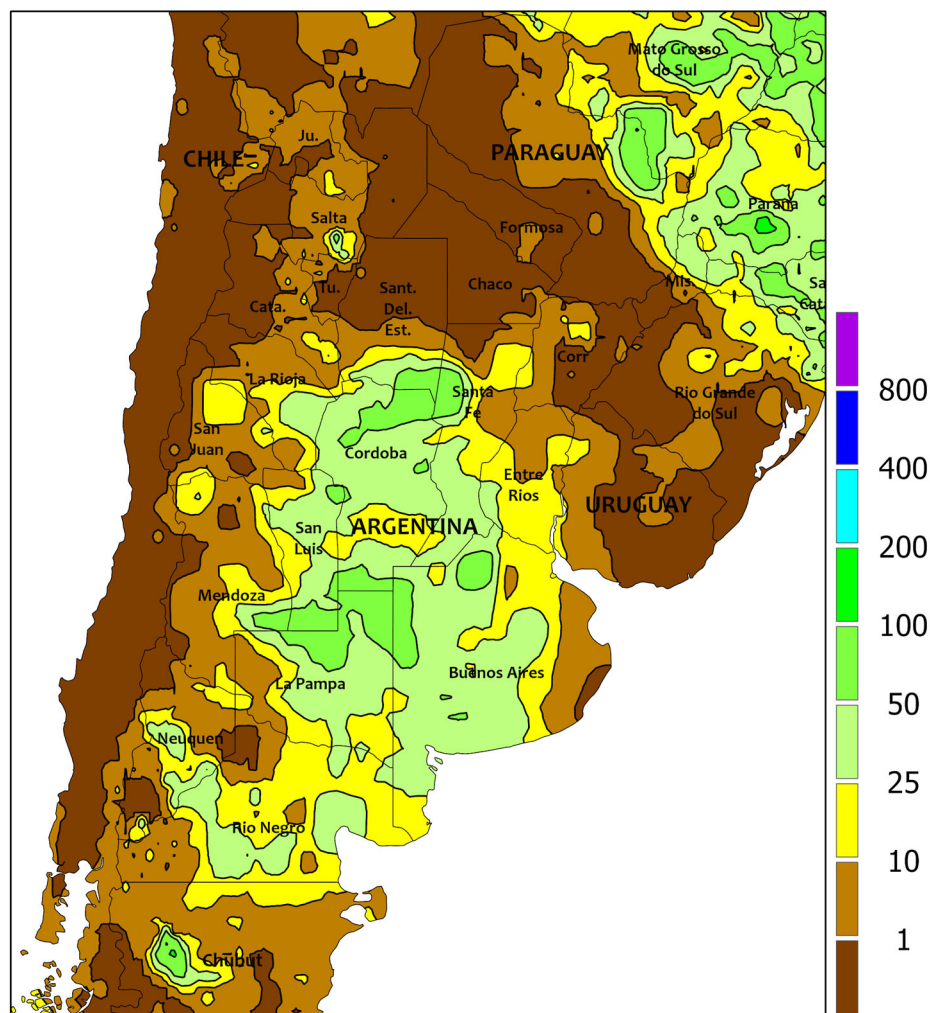


SOUTH AFRICA

Warm, generally sunny weather promoted development of corn and other rain-fed summer crops. Across the corn belt (North West and Free State eastward), showers were widely scattered and light, with large areas recording complete dryness. Elsewhere in the east, heavier rain (25-50 mm) concentrated over southeastern Free State benefited immature summer crops while also further increasing moisture reserves in watersheds of the Orange and other key river systems.

Highest daytime temperatures in the aforementioned areas reached into the lower and middle 30s (degrees C), fostering a rapid pace of crop growth but also increasing evaporative losses. Additional moisture will be needed in upcoming weeks as more crops advance through reproductive stages of development. Meanwhile, sunshine and occasional heat (daytime highs reaching 40°C locally) spurred rapid development of tree and vine crops in Western Cape.

ARGENTINA
Total Precipitation(mm)
January 15 - 21, 2023



CLIMATE PREDICTION CENTER, NOAA
Computer generated contours
Based on preliminary data



ARGENTINA

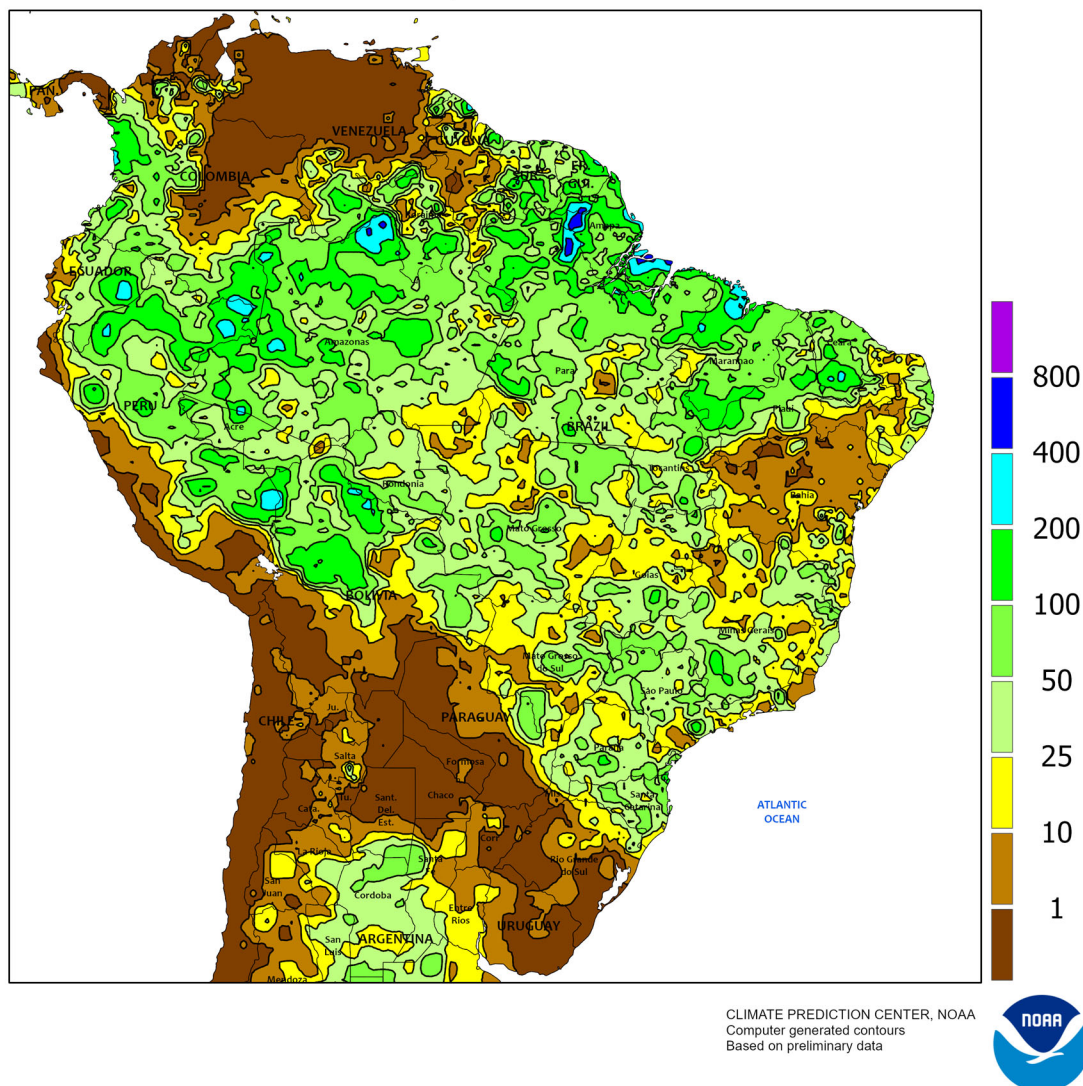
Late-week showers brought much-needed relief from heat and dryness. Rainfall totaled 25 to 50 mm – locally higher – throughout much of central Argentina, notably including high-yielding farmlands of the lower Paraná River Valley (northern Buenos Aires and environs). Temperatures dropped to more seasonable levels as a result of the rainfall, though oppressive heat (highest daytime temperatures reaching 40°C locally) on several days prior maintained stress on crops varying in development from emerging to filling. While timely for late-planted summer

crops, the moisture came too late to reverse damage already incurred to crops that advanced through reproduction under significant stress. Farther north, mostly dry, occasionally hot weather (highs reaching the lower 40s degrees C) prevailed from Salta to Corrientes, drying soils rapidly after last week's showers. According to the government of Argentina, corn and soybeans were 90 and 94 percent planted, respectively, as of January 19; similarly, cotton was 86 percent planted, although last year's pace stood at 99 percent during the same period.

BRAZIL

Total Precipitation(mm)

January 15 - 21, 2023



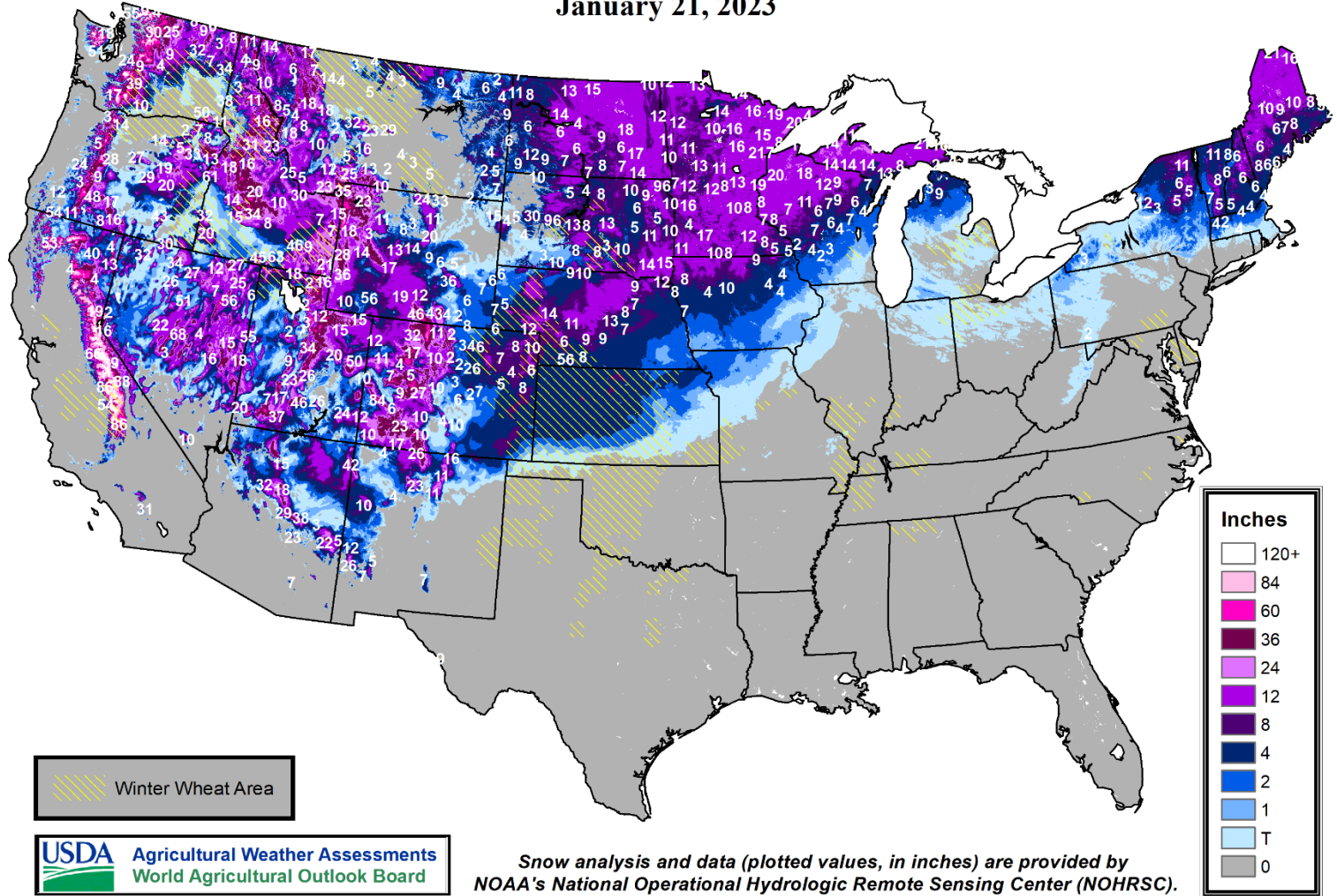
BRAZIL

Unseasonable warmth and dryness lingered over portions of southern Brazil, as more favorable conditions continued farther north. Rainfall totaled less than 10 mm over large sections of Rio Grande do Sul, although heavier rain (locally greater than 50 mm) fell in the northeastern part of the state bordering Santa Catarina. Rainfall was highly variable in other parts of the south, with pockets of relative dryness (less than 25 mm) lingering in Paraná, Mato Grosso do Sul, and São Paulo. Summer warmth (daytime highs often reaching the middle 30s degrees C) exacerbated the impact of the dryness on crops not growing with adequate moisture. According to the government of Rio Grande do

Sul, corn was 95 percent planted as of January 19, with 84 percent of the sown crop having reached reproduction (18 percent harvested). In contrast, 98 percent of soybeans were planted, and 22 percent of that crop had reportedly flowered. Showers were also variable farther north, ranging from 5 mm to locally more than 50 mm, with daytime highs generally confined to the upper 20s and lower 30s. Pockets of dryness in central and eastern Mato Grosso were timely for soybean harvesting and other seasonal fieldwork. According to the government of Mato Grosso, soybeans were 6 percent harvested as of January 20, lagging both last year's pace (13 percent) and the 5-year average (9 percent).

Snow Depth

January 21, 2023



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